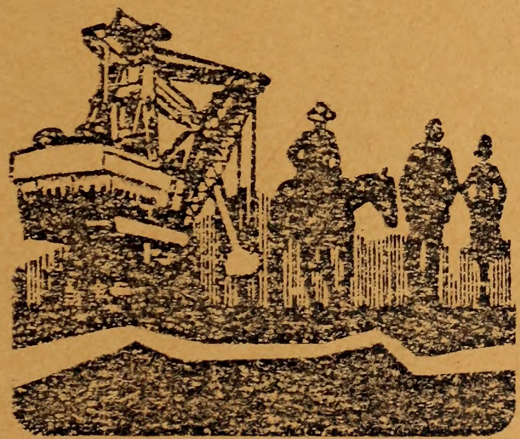
BLM LIBRARY
88002250

Summary Research Report



BLM

social effects project

July 1982

9884012

ID: 88002250

HD
9502
.A472
T47
1982

The Bureau of Land Management
Social Effects Project

Summary Research Report

By:
James G. Thompson, Kristi Branch
and Gary Williams

Prepared by:

Western Research Corporation
Laramie, Wyoming

In association with

Mountain West Research, Inc.
Billings, Montana

July, 1982

Contract No. AA851-CT0-46

BLM-YA-PT-82-008-1606

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225

BLM Social Effects Project

BLM Project Coordinators

Paul Myers
Tony Guida
Julia Jordan
Frances Sullivan

Project Director

James R. Moore, Mountain West Research, Inc.

Project Co-Managers

James G. Thompson, Western Research Corporation
Kristi Branch, Mountain West Research, Inc.

Project Team

Stan Albrecht, Brigham Young University
Pamela Bergmann, Mountain West Research, Inc.
James Creighton, Creighton & Creighton
Douglas Hooper, Mountain West Research, Inc.
Pat Jobes, Montana State University
Robert L. Kimble, Western Research Corporation
Errol Meidinger, Lewis & Clark Law School
Steve Murdock, Texas A & M University
David Pijawka, Mountain West Research, Inc.
Allan Schnaiberg, Northwestern University
Matt Snipp, Summers Associates
Gene Summers, Summers Associates
Ken Wilkinson, Pennsylvania State University
Gary Williams, Western Research Corporation

Technical Editing

Judy Gould
Mary Hill
Jennie Parker

Table of Contents

Page

Chapter One. Introduction 1
- 1.1 Purpose of the Project 1
- 1.2 Purposes of the Research Effort 4
- 1.3 The Analytic Framework 5
- 1.4 Structure of the Research 22

Chapter Two. Community Studies: Research Design, Data Analysis, and Community Summaries 25
- 2.1 Research Design 25
  - 2.1.1 Conceptual Framework 25
  - 2.1.2 Selection of Study Communities 26
  - 2.1.3 Field Procedures and Instruments 32
  - 2.1.4 Limitations of the Case Study Approach 33
- 2.2 Summaries of the Ten Case Studies 35
- 2.3 Employment by Industrial Sector 35
  - Case No. 1: Craig, Moffat County, Colorado 51
  - Case No. 2: Rangely, Rio Blanco County, Colorado 62
  - Case No. 3: Price, Carbon County, Utah 72
  - Case No. 4: Salina, Sevier County, Utah 81
  - Case No. 5: Grants, Cibola County, New Mexico 93
  - Case No. 6: Washburn, McLean County, North Dakota 107
  - Case No. 7: Douglas, Converse County, Wyoming 119
  - Case No. 8: Wheatland, Platte County, Wyoming 131
  - Case No. 9: Rosebud County, Montana: Forsyth and Colstrip 141
  - Case No. 10: Ashland, Rosebud County, Montana 153

Chapter Three. Outside Linkages (Extra-Local Linkages) 161
- 3.1 Introduction 161
- 3.2 Pre-Impact Conditions 161
  - 3.2.1 Low Pre-Impact Extra-Local Linkages 161
  - 3.2.2 Moderate Pre-Impact Extra-Local Linkages 163
  - 3.2.3 High Pre-Impact Extra-Local Linkages 164
- 3.3 Changes in Extra-Local Linkages 164
  - 3.3.1 Political Linkages 165

Table of Contents (continued)

Page

3.3.2 Economic Linkages 168
3.3.3 Social Linkages 172
3.4 Importance of Pre-Impact Conditions 172
3.5 Meaning of Changes 174

Chapter Four. Diversity/Complexity (Differentiation) 175
4.1 Introduction 175
4.2 Pre-impact Conditions 176
4.2.1 Low Differentiation 176
4.2.2 Moderate Differentiation 178
4.2.3 High Differentiation 179
4.3 Change in Diversity and Complexity 180
4.3.1 Low Change 182
4.3.2 Moderate Change 183
4.3.3 High Change 184
4.4 Political Diversity 186
4.5 Economic Diversity 188
4.6 Social Diversity 190

Chapter Five. Distribution of Resources and Power (Stratification)
5.1 Introduction 195
5.2 Pre-impact Conditions 195
5.2.1 Low Complexity 196
5.2.2 Moderate Complexity 196
5.2.3 High Complexity 198
5.3 Changes in Stratification 200
5.4 Analysis 211

Chapter Six. Community Coordination and Cooperation (Integration) 214
6.1 Introduction 214
6.2 The Relationship of Community Integration to Growth Management 216

Chapter Seven. Changes in Social Well-Being 225
7.1 Indicators of Social Disruption 225
7.2 Access to Resources 234
7.3 Perceptions of Community Well-Being 241

Chapter Eight. Summary of Social Effects 257
8.1 Summary of Findings 257
8.1.1 The Seven Research Priorities Developed at the BLM Conference and Related Questions 257
8.2 A Predictive Summary of Social Effects 288
8.2.1 The Value of a Summary of Social Effects by Type of Community 288

Table of Contents (continued)

Page

8.2.2 Agricultural Versus Mixed Economy Communities 289

Footnotes 295

Appendix A 297

List of Figures and Tables

		Page
Figure 1.	Social Organization Model	8
Figure 2.	Regional Map	30
Figure 3.	Regional Map	31
Table 2-1.	Summary of Community and Project Characteristics	36
BEA Tables.	Employment for Industrial Sector for 11 Counties	40
Table 3-1.	Pre-Impact Conditions: Extent of Outside Linkages	162
Table 3-2.	Changes in Outside Linkages in Ten Communities	166
Table 4-1.	Changes in External Linkages in Ten Study Communities, 1970-1980	177
Table 5-1.	Changes in Diversity in Ten Communities, 1970-1980	201
Table 6-1.	Cooperation and Coordination in the Ten Study Communities	217
Table 7-1.	Rate of FBI Part I Offenses for Ten Counties, 1970-1980	226
Table 7-2.	Rate of Divorce for the Ten Study Communities, 1970-1980	229
Table 7-3.	Summary of Extent of Mental Health Problems in Ten Study Communities	232
Table 7-4.	Per Capita Income for Nine Study Counties and Six States, 1970-1980	236
Table 7-5.	Rate of Unemployment for Nine Study Counties and Six States, 1970-1980	238
Table 7-6.	Student Teacher Ratios for Nine Study Counties and Six States, 1970-1980	240
Table 7-7.	Perceptions of Community Structure and Processes in Nine Study Communities	243

List of Figures and Tables (continued)

Page

Table 8-1. Baseline Characteristics and Social Changes as Predicted for Agricultural Versus Mixed-Economy Communities 291

Chapter One

Introduction

1.1 Purpose of the Project

In the spring of 1980, the Bureau of Land Management (BLM) sponsored a project to improve assessment of the social effects of energy development in the West. Mountain West Research, Inc., in association with Western Research Corporation, was selected to carry out this two-year effort.

The project was designed to improve social assessments especially for use with the new Federal Coal Management Program which specifies cooperative state/federal efforts in selecting federal coal leasing tracts. The specific objectives of the BLM Social Effects project were:

(1) to identify and prioritize social effects that need to be addressed in assessment of energy development alternatives in the West[1];

(2) to formulate and prioritize questions that needed answering to enable the BLM to assess priority social effects;

(3) to conduct research addressing the priority questions;

(4) to develop a guide for social assessment that would be compatible with BLM procedures; and

(5) to develop and conduct training workshops for BLM social scientists and decision-makers to facilitate their use of the guide and research results.

In summary, the project was designed to enhance the capability for assessing social effects so decisions regarding energy development in the West could be improved.

Major Project Components and Progress to Date

The project had five major components. The first component, a review of the literature, provided the basis for developing an analytic framework for the assessment of social effects of energy development. The literature review was organized into eight major subject areas which included:

- social organization
- political organization
- economic organization
- population and demography
- family
- specific groups, including Native Americans, women, and youth
- attitudes, values, and quality of life
- mitigation

The second component, the Social Effects Conference, was held in Denver in October, 1980. The conference brought representatives of state governments, the BLM, and the academic community together to determine what the focus of the project would be. A principal objective was to integrate the perspectives of decision-makers and sociologists and develop a common set of assessment priorities.

The third component of the project, the research component, was based on the results of the literature analysis and the Social Effects Conference. The priorities identified for study centered on changes in community social organization and indicators of community well-being.

The fourth component of the project was the preparation of a social assessment guide and a typology of communities. The guide is the major product of the project; to ensure its applicability, it was given a trial application under actual field conditions.

The fifth component of the project was a public involvement effort to keep interested groups informed about the project. Meetings with BLM and state officials were held to brief them on the project and to solicit comments. A periodic bulletin was distributed to inform others about the project. In addition, training workshops for BLM social scientists were held to instruct them in the use of the guide.

The Project Team

The project team included sociologists from both the western energy states region and elsewhere in the country. The team was structured to provide theoretical knowledge, research experience, and management skills. The principals of the project were:

Jim Moore, project director (MWRI)

Kristi Branch, project co-manager (MWRI)

Jim Thompson, project co-manager (WRC)

A Research Design and Synthesis Group (RDSG) was formed to guide the project. This group was composed of Dr. Stan Albrecht, Dr. Steve Murdock, Dr. Gene Summers, and Dr. Ken Wilkinson, plus the project co-managers. Other members of the project team were: Ms. Pam Bergmann, Mr. Jim Creighton, Dr. Pat Jobes, Mr. Bob Kimble, Mr. Errol Meidinger, Dr. David Pijawka, Dr. Alan Schnaiberg, Dr. Eldon Schriner, Mr. Matt Snipp, Dr. Gary Williams, and Dr. Doug Hooper.

BLM representatives for the project were Dr. Paul Myers and Ms. Julia Jordan, technical supervisors.

Intended Use of This Report

This report has been designed to be used as a companion document to the Social Assessment Guide. Its primary purpose is to provide information and examples of social changes for people using the guide. For this reason, the format has been kept deliberately informal, few footnotes or citations are used, and use of professional terminology has been kept to a minimum.

1.2 Purposes of the Research Effort

The research component was included in the project to achieve three major objectives:

- to identify social effects, including those suggested by the literature review and conference, and by field investigation;
- to test the analytic framework which was developed as a basis for the Guide; and
- to further elucidate the mechanisms that cause social effects to occur in energy impact areas.

Although there were differences in emphasis among conference participants, seven priority assessment topics were identified as being of greatest concern. These were:

(1) What is the distribution of socioeconomic effects among groups in impacted areas?

(2) What determines the capacity of communities to manage growth?

(3) What are the attitudes of residents, both old and new, toward development?

(4) What are the effects on community facilities and services?

(5) What are the major lifestyle and social organization changes resulting from energy development?

(6) What are effective mitigation strategies?

(7) How can cumulative social effects be measured or described?

Conference participants also emphasized that BLM needed an assessment method that could handle site specific variations and that would be compatible with the multi-phase BLM assessment and planning processes.

The research phase was to last nine months and financial resources were limited. Clearly, the research effort could not do justice to all seven of the research priorities summarized above, and it was not the intention of BLM that the research effort provide definitive answers to all social impact questions. The goal was to devise an analytic framework that would produce effective social assessments given the BLM process and, at the same time, to learn as much about the above areas of concern as the limited resources permitted. Thus, the project team was given the seven research priorities and was asked to create an appropriate analytic framework and to implement the research effort.

1.3 The Analytic Framework

Several general criteria guided the development of the analytic framework. The first criterion was to be sure that the subject of the research was clearly social in nature. The BLM believed that enough was known about how to do economic and demographic assessments as well as facilities and services assessments, but that social assessments needed improvement.

Second, if possible, BLM wanted the assessment process to discriminate between social effects that could be mitigated and those that probably could not. Before BLM or state and local entities can require mitigation, the effects must be known and feasible mitigation methods must be understood.

Third, the framework needed to be implementable within a variety of resource constraints. Each assessment effort within BLM has different constraints of time, personnel and funding. Thus, the framework needed to be workable under a variety of conditions.

A final criterion was that the framework should not only enable the forecasting of effects, but also should allow for determining the significance of effects for various populations, i.e., a basis was needed to determine the meaning of social effects.

In response to these criteria, an analytic framework was developed that is based upon the concept of social organization. As used in this project, social organization is a community level concept and is discussed in detail by Wilkinson in the Literature Review (Thompson and Branch, 1981). Basically, it focuses on the social structures and processes of community social organization as the most critical social characteristics potentially affected by energy development. This framework posits that change in the fundamental processes of social organization -- complexity/diversity, outside linkages, distribution of resources/power, coordination and cooperation, and their collective effects on personal interaction -- are among the most influential social effects of energy development. With the processes of social organization as a central focus and the desire to forecast social change caused by energy development as the principal objective, the conceptual model shown in Figure 1 was developed as the framework which could be used to construct the BLM social assessment guide.

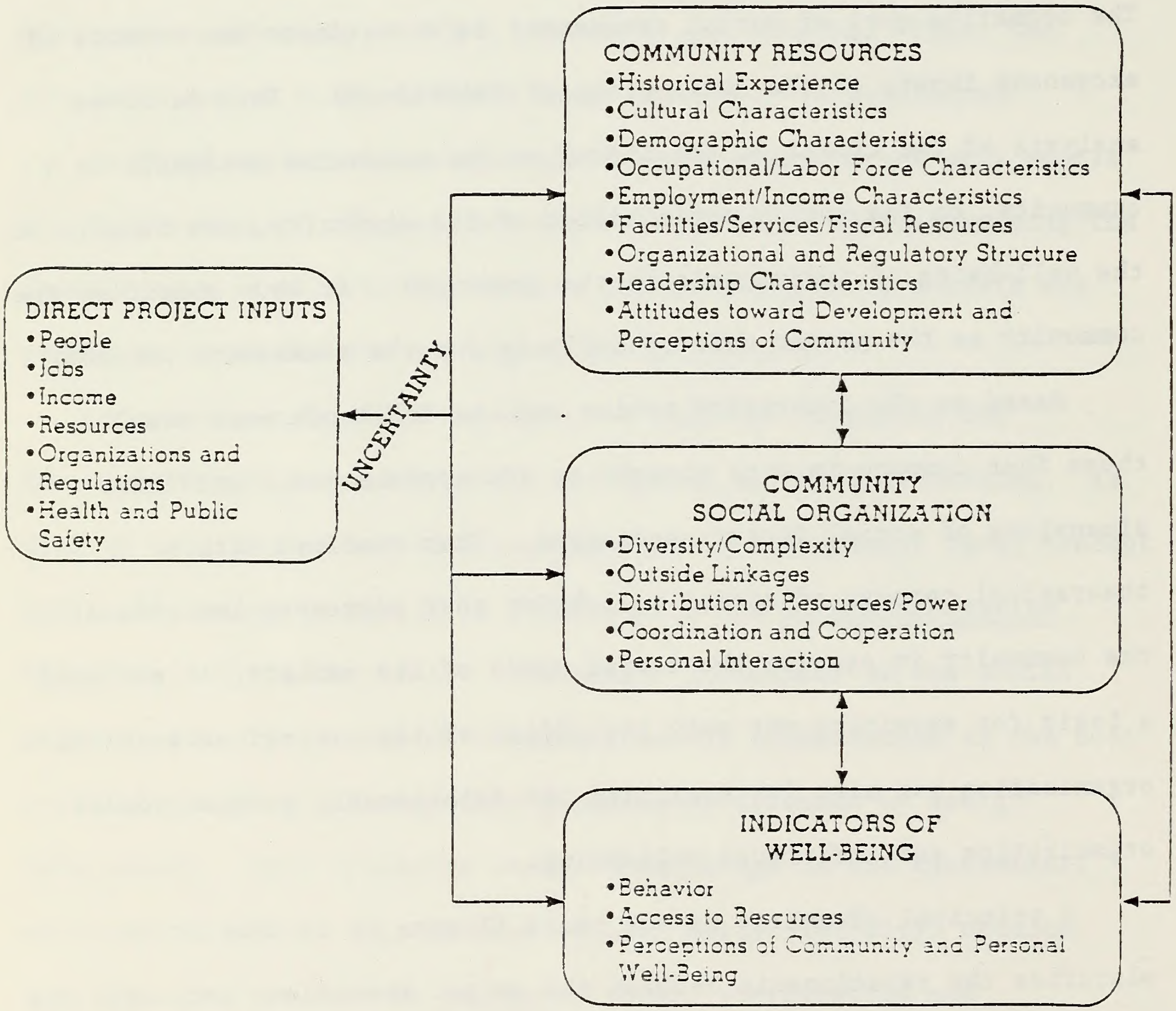
The model, Figure 1, has four major components: direct project inputs (projects, leasing decisions, resource management plans), the community's resources, its social organization, and the well-being of individuals in the community and their perception of the community.[2] The normative goal of social assessment is to estimate the effects of exogenous inputs on the well-being of individuals. This involves analysis of the effect of the inputs on the resources available in a community, on the social organization of the community, and finally on the well-being of individuals in the community. It thus specifies the community as the proper unit of analysis for the assessment process.

Based on the literature review and the BLM conference results, these four components were thought to incorporate the significant dimensions of social impact assessment. When combined with a theoretical concept of social well-being that addresses the role of the community in serving the social needs of its members, it provides a basis for examining not only the effect of the project upon social organization but also for examining the relationship between social organization and individual well-being.

A principal advantage of the model (Figure 1) is that it clarifies the relationship between the social assessment component and the other components of the total assessment process (e.g., economic/demographic, facilities and services, and natural environment). It also makes more explicit the mechanisms by which exogenous inputs modify community resources and social organization,

Figure 1

Social Organization Model


COMMUNITY RESOURCES
•Historical Experience
•Cultural Characteristics
•Demographic Characteristics
•Occupational/Labor Force Characteristics
•Employment/Income Characteristics
•Facilities/Services/Fiscal Resources
•Organizational and Regulatory Structure
•Leadership Characteristics
•Attitudes toward Development and Perceptions of Community
DIRECT PROJECT INPUTS
•People
•Jobs
•Income
•Resources
•Organizations and Regulations
•Health and Public Safety
UNCERTAINTY
COMMUNITY SOCIAL ORGANIZATION
•Diversity/Complexity
•Outside Linkages
•Distribution of Resources/Power
•Coordination and Cooperation
•Personal Interaction
INDICATORS OF WELL-BEING
•Behavior
•Access to Resources
•Perceptions of Community and Personal Well-Being

and, ultimately, individual well-being -- directly by the primary effect of the inputs, and indirectly by changing interaction patterns among the components.

Description of the Components of the Social Organization Model

Project Inputs

One of the important features of the model is that it posits mutual causality, i.e., both the inputs and the community are affected by the changes generated by their interaction.[3] Consequently, specification of inputs becomes part of the analytic process, which must proceed iteratively over the assessment process.

Specification of input characteristics requires close collaboration with the economic/demographic analysts, since much of this information is the principal responsibility of the economic/demographic assessment component. Given the dual purpose of this component, it is important that the community's capability to change these inputs be adequately evaluated by the social component.

Although not generally profiled, information about the organizational characteristics of external actors (for example, BLM or project sponsors) and their attitudes toward development and the community is essential to the inputs components. These organizational characteristics can be influential in determining social effects. For example, a project implemented by a company which follows a policy of open planning with a community will cause different social effects than one implemented under other circumstances.

Community Resources

The focus of the model is on the structures and processes that organize and distribute the resources of the community[4] and on the consequent well-being of community members. The resources of the community (e.g., the size of the community, its demographic composition, occupational structure, and cultural characteristics) have interactive effects with the social structures and processes in the community, the social well-being of its residents, and with the inputs to the community. Consequently, specification of the relationships between the changes in the resources available in the community and the changes in the community's social organization and well-being is necessary in order to apply the social organization model to impact assessment or to research.

Review of the literature, discussions at the Social Effects Conference, and field experience indicate that the community resources most influential to these relationships are the community's:

(1) historical experience with development;
(2) cultural characteristics;
(3) demographic structure and labor force characteristics;
(4) public facilities and services;
(5) economic resources (public and private);
(6) institutions and organizations; and
(7) residents' attitudes toward development.

Information concerning the community's experience with development and its cultural characteristics is important in understanding the evolution of the community's social organization and residents' attitudes toward development. The interaction of these resources has a collective influence on the community and the changes ultimately realized.

Community Social Organization

Social organization generally denotes the structures and processes by which collective life is ordered. Social organization can be distinguished from ecological organization and personal organization, and each of these influences the other. However social organization is a distinct phenomenon, particularly important for study in the case of energy development. At the community level, these three forms of organization can be seen as separate levels of analysis of social behavior. A community is an ecological unit and a social/psychological unit composed of shared cognitions and attitudes, but it is also a unit within which patterning can be discerned in social relationships.

Organization is provided indirectly in social relationships by ecological conditions and by the aggregate characteristics of individuals. Organization is provided directly, however, by two aspects of social organization itself: culture patterns and forms of interaction.

Culture refers to shared ideas which regulate behavior. Cultural differences between communities and societies continue to exist, but have been greatly diminished by developments in interaction, notably the extensiveness of interactions between communities. Chief among these developments in interaction has been the extension of the national/international news media and the proliferation of national/regional interest groups and governmental agencies. The distinctiveness of community as a form of social organization in modern society is determined primarily by the role local social interaction plays in ordering social life for the members of a community.

Community social organization, as described in Figure 1, consists of interrelated processes, each of which can be inferred from contemporary structural characteristics, but each of which is better understood in terms of the interactions of which it is comprised. The four processes of social interaction considered most critical to the assessment of social impacts of energy development are:

- diversity/complexity (differentiation)
- outside linkages (extra-local linkages)
- distribution of resources/power (stratification)
- coordination/cooperation (integration)

For general applicability, the four processes of social organization are differentiation, extra-local linkages, stratification, and integration. These are the broad social science labels used to describe these processes. But for purposes of this report, names of the processes have been restricted to those elements of the process which appeared to be of the greatest importance for western energy assessments. These terminology changes have been made in keeping with our intent to make this research report a companion to the Social Effects Guide.

Diversity/Complexity (Differentiation)

Differentiation is the process of expanding the range of values and interests represented in a community. Empirical research on differentiation suggests several ways in which it might influence or be influenced by energy development. For example, growth in population, other things being equal, increases both demand and capability for increased differentiation. Economic changes associated with energy development can result in greater differentiation of the industrial and occupational characteristics of the community and in diversification of interest groups which interact within the community.

Ethnic and cultural diversity may also be increased by energy development, stimulating differentiation of structures for meeting new needs and demands and for responding to greater diversity of behavior. Studies in social anthropology and sociology have provided strong support for the proposition that increased differentiation is virtually an inevitable consequence of population growth in modern society.

There is also some evidence that differentiation follows a somewhat predictable, cumulative pattern, with levels of specialization in various interest sectors tending to be relatively consistent with one another. "Gaps" in differentiation (i.e., imbalances which occur when levels of differentiation are inconsistent among sectors) have been hypothesized as causes of stress in the short run, and as causes of mobilization of community action in the long run. Differentiation in modern society increases specialized structures, but also presents special problems of community integration because of the greater complexity and scale of units to be integrated.

Outside Linkages (Extra-Local Linkage)

Extra-local linkage is the process by which resources flow between the community and the larger society. Linkage to the larger society is likely to be affected by energy development. An increase in the mechanisms of linkage has been identified in many studies; for example, the introduction of newcomers who maintain connections outside the community and bring ideas, practices, and commitments from the larger society into the community; organizations which play a role directly in energy development; organizations of the larger society which enter the community or expand their activities there in response to increased demands for services; and resource-exchange interactions which accompany export of energy resources.

Distribution of Resources and Power (Stratification)

Social stratification has many dimensions and meanings. Here the dimensions of stratification examined are power (being able to organize and control resources), status (the amount of prestige or esteem one receives, wealth (the amount of property and/or money one has), and access to resources (the ability to gain or receive the resources available in the community). These dimensions of stratification tend to be, but are not necessarily, linked.

Stratification in the community is likely to influence and be influenced by energy development in a number of ways. An increased flow of resources (and demand) into a community has been found to produce, over the long run, increased opportunity to equalize the local distribution of access to economic resources and services. The degree to which this increased opportunity is realized is influenced by a number of factors, with the existing stratification system being one of the most important. Many studies have shown that the relative status of some groups of people in a community are reduced, at least over the short run, by certain types of economic changes. For example, rural industrialization has generally been found to have little effect on the employment characteristics of depressed populations. Therefore, the increased cost of living that can result from the rapid increase in local economic demand accompanying large scale projects presents potentially serious problems to those on fixed incomes and to those, like the chronically unemployed, who cannot acquire jobs or benefit directly in other ways from the growth. Under what circumstances opportunities for more equal access are increased and how these circumstances can be encouraged in the development process are important considerations.

Stratification in a community is influenced by the occupational distribution of a local work force, a characteristic which is likely to be influenced by energy development. The power vested in those who control vital economic resources is likely to be affected as new power groups enter into competition in local interaction. Several studies have shown a tendency for basic economic power to be shifted from one sector to another and for local economic control to be reduced by energy developments; these changes increase the influence of the larger society in community affairs and alter each of the four basic processes of interaction in the community. Energy development thus has the potential of reducing the relative status of some groups of residents while increasing the status of others.

Other studies indicate that energy development can increase the extent of status inconsistency in a local population. This occurs because the numerous hierarchically structured criteria by which relative status is allocated in modern society are not affected similarly during the rapid changes accompanying energy development. Inconsistencies might be created, for example, between levels of income and consumption because of gaps in service provision, or between levels of family status in community history and levels of power in contemporary decision-making. There is some evidence (especially in studies of suicide) that such status inconsistency can produce stress in interpersonal relationships and personal organization. Further discussion of the interaction of political and economic change with the stratification system is provided in the Literature Review (Thompson and Branch, 1981).

Coordination and Cooperation (Integration)

Integration is the process by which the relationships among people in a community are coordinated and interconnected. The effects of energy development on community integration have been at the heart of many public controversies (particularly in the press) over energy developments. As noted above, little systematic research has been conducted to examine these effects directly. The general literature on community integration, however, suggests several potential effects of energy development on this process.

Increased differentiation and extra-local linkage present special problems of integration, but they also carry potential for the emergence of new, more dynamic forms of integration. Integration is also affected by changes in stratification. In general, increased equity increases the potential for integration, although some degree of integration, particularly on a traditional basis, is attained even under conditions of inequity. A critical variable in this process appears to be the characteristics of integration in the community prior to the introduction of the change agent, particularly the degree to which the community integration process allowed residents to take action and manage the change process. Maintaining coordination and integration in a community with an increased diversity of cultural backgrounds requires greater complexity of the integrative mechanisms. There is, however, substantial evidence from studies of community change which indicate that integrative mechanisms appropriate to a larger, complex, vertically linked society can be articulated under some conditions in rapidly growing communities.

Most major theoretical perspectives in sociology carry an implicit assumption that integration is a natural disposition in social life because of objective interdependency and similar characteristics among people who live together, but can be restricted in expression by extant social conditions. These restrictive conditions appear to occur under extreme conditions of differentiation, stratification, and rates of social change. Below some hypothetical threshold of these rates (differentiation and social change), integration is restricted by inadequacies in the availability of resources and services. Above some hypothetical level of optimal social conditions, integration is restricted by the sheer scale of units to be coordinated and by the speed with which change occurs. These two threshold points probably differ from community to community, according to other site specific social conditions such as ecological and cultural characteristics, and they probably change over time within a society.

Social Well-Being

As mentioned previously, the principal purpose of the social assessment process is twofold. One is to correctly identify and describe the types of social changes that are likely to occur if a proposed action is taken. The second is to provide an evaluation as to whether these changes are positive or negative, and to what degree (a description of how the social well-being of people will be affected by the projects).

In the social well-being component, the community is maintained as the unit of analysis, and individual well-being is addressed at a community level.[5] With this approach, the analysis of the social well-being of individuals is addressed by examining behaviors occurring in the community (in terms of rates), access to resources, and perceptions of community well-being. This allows the development of community level indicators of social well-being based on objective as well as subjective measures which can then be combined with other objective measures obtained from the community resources and community social organization components.

Behaviors

There are a number of behaviors which have been utilized as objective indicators of social well-being, and for which both theoretical justification and empirical data are available. In this study, attention was focused on a community's patterns and rates of behaviors indicating social, familial, and personal dysfunction (for example, crime, family violence, delinquency, divorce), although those appropriate as positive indicators of well-being were also examined. This is an area where considerable secondary data are available, albeit usually at a county rather than community level, and upon which a great deal of emphasis has been placed in existing social impact assessments.

Access to Resources

An additional measure of well-being repeatedly shown to be of great importance is access to resources. The community resources component can be analyzed in terms of aggregate and per capita measures of resource availability. This analysis focuses on changes in the pattern of resource availability within the community, with particular emphasis on groups thought to risk relative decline in resource availability as a result of energy development. As with the project inputs and community resources, this aspect of the analysis requires collaboration with those responsible for the economic, demographic, and facilities/services components.

Perceptions of Community Well-Being

Perceptions of community are the images which people hold of the structures and processes of the community; perceptions of individual social well-being are those they hold of their personal social situation. Given the importance of the community to individuals (discussed above), perception of community can be considered a particularly important component of the perception of individual social well-being. Residents' perceptions of community are related to, but may not correspond exactly with, objective change in community and individual resources, community social organization, and patterns of behavior in the community. Social reality is the interaction of the objective and the perceived. Consequently, to accurately assess the social change occurring with energy development, and particularly the significance of that change, it is essential to understand the effects on perception of community well-being. In addition, since perceptions can have a powerful influence on individual and social action, information concerning these perceptions is essential to forecasting and understanding community response to energy development.

Little attention has been given to perceptions of community in terms of structure and processes. Yet the literature indicates that this is an important key to understanding and clarifying a major part of the impact of energy development which has previously been poorly articulated, and to understanding differences in community response and patterns of change in community social organization. For example, if people perceive that they do not have access to resources, the stratification system is as closed to them as if no resources were actually available. Perception of a closed stratification system may be an important determinant of behavior, particularly for newcomers to a community. If new people believe, for example, that small western towns do not welcome newcomers into their traditional social organizations, then they may never ask to join such organizations, thus establishing a stratification process that otherwise might not have emerged.

The process of integration is particularly influenced by perceptions. Efforts of coordination by existing organizations in a community may be relatively extensive, but if people do not perceive this coordination they may feel isolated from the community. This sense of isolation may be manifested in subsequent behaviors and perceptions that influence community organization as well as the level of individual well-being in the community.

As discussed above, measurement of people's perceptions and attitudes has often been present in western social impact assessments. However, the resulting information has seldom been effectively used in assessing social effects. As illustrated in Figure 1, attitudes and perceptions have a major function in each of three community components in the proposed social organization model, but the type of attitudes to be measured and their function in the analysis is different for each component.

In the social well-being component, both objective and subjective measures are used as important evaluative indicators of well-being that can be directly affected by changes in community resources caused by the inputs (e.g., changes in the demographic composition of the community), or indirectly through the mediation of the social structure and processes of the community. In turn, changes in individual well-being can directly influence total community resources (e.g., by residents leaving the community because of a decline in their personal well-being) and community social organization (e.g., by causing change in the process of integration) and can indirectly affect the inputs to the community (e.g., by causing high worker replacement requirements because of turnover). A major aim of the model is to establish how these interactions work (i.e., what combination of community and development characteristics cause significant effects on community and individual well-being and why).

1.4 Structure of the Research

The research effort consisted of conducting ten comparative community case studies. These were imperative since little secondary data exists for the social variables specified in the model. Further, since the social organization variables have received little attention in western social impact research there was little known about them. Consequently, the case study effort was divided into two phases. The first phase was exploratory in nature and included four communities. More time and effort was allocated to these communities to determine the utility of the model, and to identify major relationships and variables. In the second phase, six more communities were included, but the effort was more focused and fewer resources were expended per community.

The remainder of the report is divided into seven chapters. Chapter Two describes the comparative case studies including the research design and major findings. Chapters Three, Four, Five, Six, and Seven summarize the major changes in social organization and changes in social well-being. Chapter Eight develops a typology of impact communities and summarizes impacts that occurred in the study communities by type of community.

Chapter Two

Community Studies: Research Design, Data Analysis, and Community Summaries

2.1 Research Design

2.1.1 Conceptual Framework

As stated above, the analytic framework devised to guide the research, Figure 1, dictates that the "community" be the unit of analysis.[6] This approach suggests that the social meaning of development for members of a social unit, the community, is determined largely by the interaction of exogenous inputs with the community's resources and its social organization. The interaction of these three components affects the social well-being of community members and are in turn affected by changes in the well-being of the community members.

Using this approach meant the focus of the research had to be the communities themselves. It was decided the focus had to be further restricted to rural communities, those with less than 25,000 people. This was important because many of the problems facing BLM are concerned with disruption in rural, western towns.

With the focus on social organization and the community, the data had to be mostly primary data collected by the research team in the field, and it was important that the results be as easily generalized as possible. Since in-depth studies of only a few cases could produce misleading results, it was important to include as many cases as possible. Eventually, ten case communities were selected (see 2.1.2).

To obtain data needed for the four components of the model, two main data sources were identified: unstructured interviews and secondary data available only at the state or local level. The secondary data collected locally were mostly for the inputs and community resource components, and for rates of behaviors. Unstructured interviewing was used for data on social organization processes and the other two major indicators of well-being -- access to resources and perceptions of the community.

Field research teams of two each were used, with ten members of the project team participating. Of these ten members, nine had considerable experience interviewing in energy impacted towns, and rotation of team members among teams was used to minimize interviewer bias. Field instruments and procedures were developed and pretested by a three-person team before research on the ten communities was initiated (see 2.1.3).

2.1.2 Selection of Study Communities

A purposeful sampling of communities in the six-state study region based on the following criteria was decided to be the most effective sampling procedure.

THESE CRITERIA WERE:

(1) The community must have had input from a major energy project between the years 1965 and 1980;

(2) The energy development impacting the community had to be a mine, a processing plant (or both), or a gas and oil field development. Employment had to total at least 300 people, since this is approximately the minimum size of projects likely to result from the BLM leasing process. (Although a preference was shown for coal development, other energy activity qualified.);

(3) The community had to be outside a metropolitan area;

(4) The energy development had to be past the peak of the construction phase, and preferably, construction had been completed;

(5) Because of the tremendous differences in legal and organizational structure between the six states, there had to be representation from each state -- preferably two communities from each state; and

(6) If possible, one of the communities in each state was to be relatively large and one relatively small (compared to the range of community sizes in the six-state area).

THE SAMPLE:

From the following list of all communities in the six-state region that met these criteria, the communities indicated with an asterisk were tentatively selected for primary field research.

Figures 2 and 3 are regional maps of the United States which show the six states with the twelve communities selected for study. Figure 2 shows the location of the study communities, while Figure 3 is a more detailed map and includes highways and other cities and towns.

State	County	Town or Community
Colorado	Delta	Cedaredge Delta Paonia
	Garfield	Carbondale Newcastle Rifle
	Gunnison	Crested Butte Gunnison Pitkin
	Jackson	Walden
	Moffat	*Craig
	Rio Blanco	*Meeker Rangely
	Routt	Hayden
Montana	Rosebud	*Ashland Birney Busby Colstrip *Decker Forsyth Lame Deer
New Mexico	Colfax	Raton
	McKinley	Gallup Thoreau
	San Juan	Aztec *Blanco Bloomfield Farmington Shiprock
	Cibola (formerly Valencia)	*Grants

State	County	Town or Community
North Dakota	McLean	Garrison
		*Underwood
		Washburn
	Mercer	Beulah
		Hazen
	Oliver	*Center
Utah	Carbon	East Carbon
		*Helper
		Price
		Wellington
	Emery	Castle Dale
		Cleveland
		Emery
		Huntington
		Orangeville
	Sevier	*Salina
Wyoming	Campbell	Gillette
		Wright
	Carbon	Rawlins
		Sinclair
		Wolcott Junction
	Converse	*Douglas
		Glenrock
	Johnson	Buffalo
	Lincoln-Uinta	Evanston
		Kemmerer
	Platte	Glendo
		*Guernsey
		Wheatland
	Sheridan	Big Horn
		Dayton
		Ranchester
		Sheridan
		Story
	Sweetwater	Green River
		Rock Springs

FIGURE 2

REGIONAL MAP

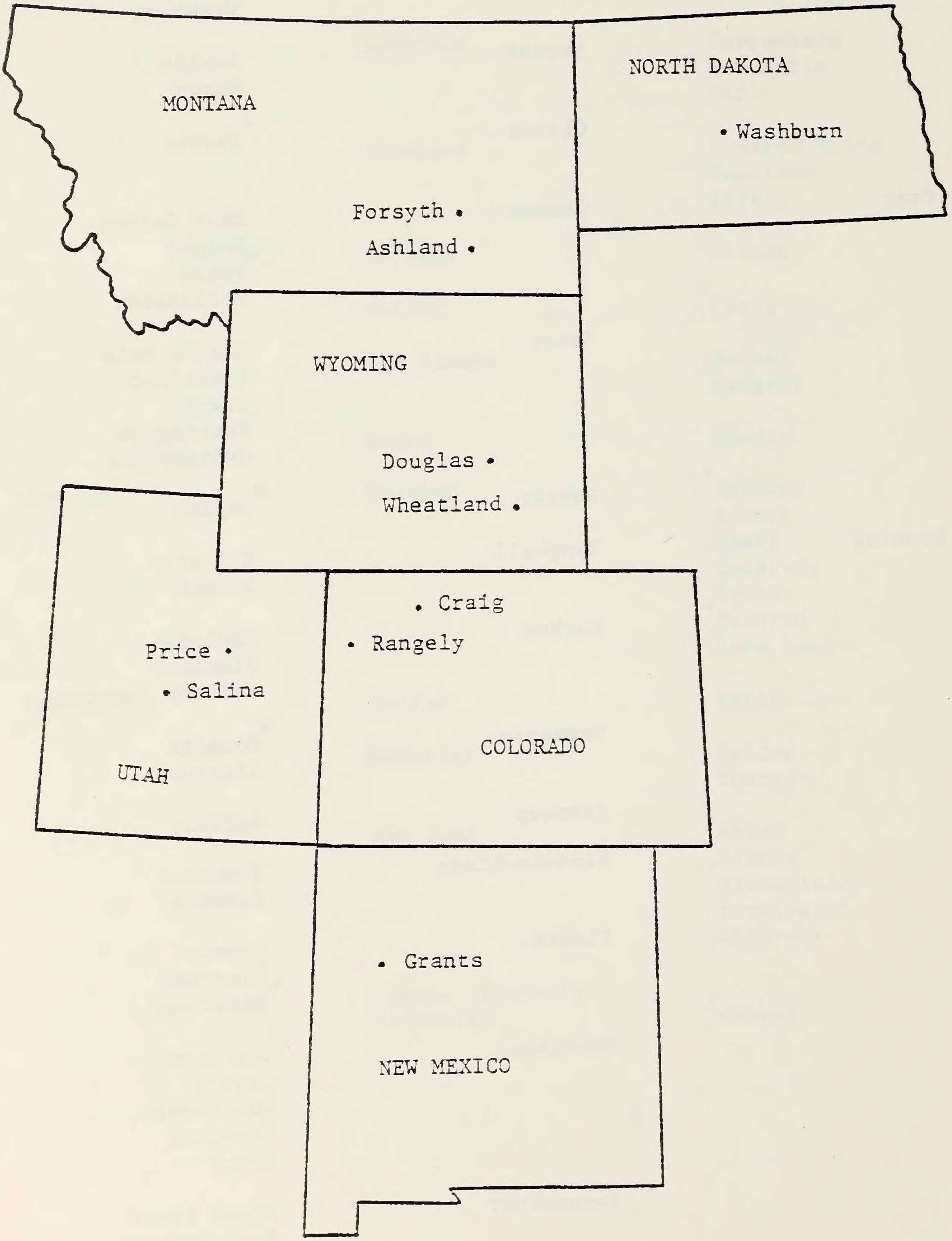
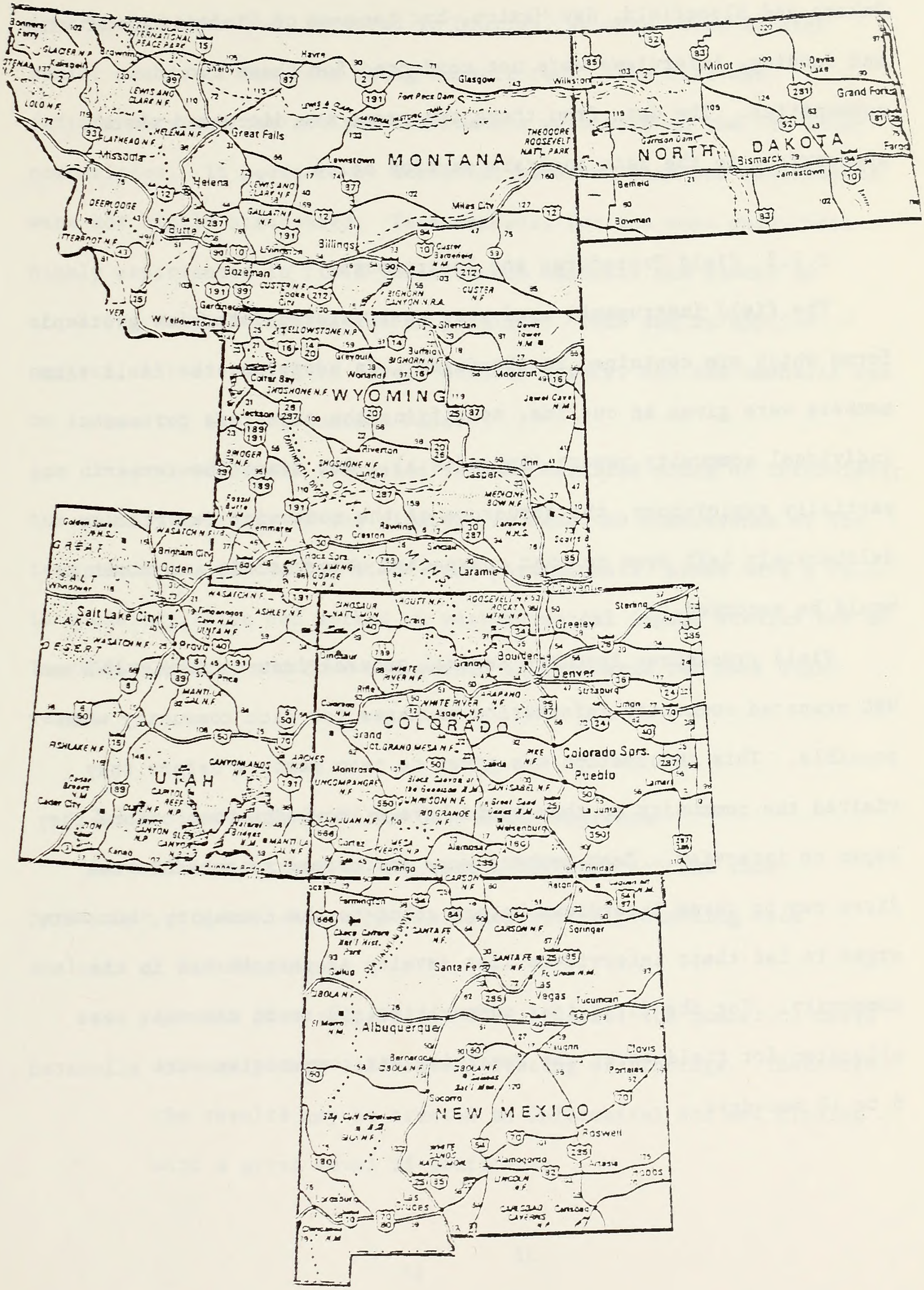


FIGURE 3

REGIONAL MAP



Of the twelve communities selected, ten case studies were completed. Some secondary data were collected for Center, North Dakota and Bloomfield, New Mexico, but because of limitations of time and funding, interviews were not conducted for these two communities. The data from these two areas are discussed where appropriate in the data analysis section below.

2.1.3 Field Procedures and Instruments

The field instruments used were unstructured interview protocol forms which are contained in the Guide. In addition, the field team members were given an outline, specifying the structure for each individual community report (Appendix A). But since the research was partially exploratory, the structure of the community reports was deliberately left open so that unexpected observations and findings would be recorded.

Field procedures involved several general instructions. MWR and WRC prepared community information packages for each community when possible. This information was given to team members before they visited the community so they would have a knowledge base before they began to interview. Team members were encouraged to schedule the first two or three interviews before going to the community, but were urged to let their interviewee list develop as they worked in the community. For the first four communities, 10 to 16 man-days were allocated for field work; the remaining six communities were allocated 6 to 10 man-days.

The instruments were pretested in Gillette, Wyoming by three senior members of the team. Appropriate revisions were made and the instruments were then retested in Douglas, Wyoming, with another senior member of the team being substituted. This test was satisfactory and the revised instruments were used in the ten study communities. It needs to be stressed, however, that the instruments were not highly structured. Team members, for the most part, were highly experienced in field research and emphasis was placed on acquiring as much information as possible. This was an applied project, not a testing of a well-defined theory, and the emphasis was on increasing the information base.

Interviewers were requested to make detailed notes of interviews; the primary validity of the findings is based on concurrence of the team members. Of the ten field team participants, seven have a Ph.D. in sociology, five had worked on western social impact studies for at least five years, and four had worked in this area for over eight years.

2.1.4 Limitations of the Case Study Approach

Several limitations of the case study approach and this particular project need to be discussed before proceeding with analysis of the findings.

- As with most comparative case studies, the number of cases did not permit statistical testing of findings. Therefore, the results may be treated as inferential but not binding with a given level of confidence.

- The amount of time spent in each community was limited. It would have been helpful if team members had completed draft reports and then revisited the communities after a suitable interval to validate their observations.
- Exogenous inputs needed to be more clearly specified and analyzed. The research phase of the project could have been improved if it had included an economic and demographic component. But the project was conceived as being purely social, and budget and time constraints did not allow a greater economic and demographic effort.

These limitations do not severely affect the usefulness of the findings, but they indicate areas where caution needs to be exercised in applying the results. The ten community studies are a resource in themselves. They provide an excellent base for more definitive studies within each of the states. Three or four more case studies in any of the six states would provide solid information for policy decisions related to social issues arising from energy development.

The following sections of Chapter Two present the case study data in summary form, following the analytic framework of the model, Figure 1. In each summary, the characteristics of the community at the beginning of the study period are described. The energy projects for each community are then briefly described. Finally, the major changes in social organization and social well-being are summarized and interpreted.

2.2 Summaries of the Ten Case Studies

The following community case study summaries are presented to give the reader as complete an understanding as possible of the communities and the process of growth and change which occurred. Emphasis is on conveying meaning; therefore, few quantitative data are presented. Readers wishing to know more about particular communities are referred to the individual community research report available from the BLM.

Preceding the individual community reports is Table 2-1 which briefly summarizes certain community and project characteristics. While providing a concise overview of each community, the table also provides a quick means of reference to and comparison of the ten communities studied.

2.3 Employment by Industrial Sector, 1970-1980

Presented here also are tables displaying county employment figures, classified by industrial sector, for each year from 1970 to 1980. While these figures are not specifically mentioned in the community reports, they do provide useful information regarding the changes and trends in county employment that occurred during the study period.

TABLE 2-1
Summary of Community and Project Characteristics[1]
(Study Period: 1970-1980)

Community[2]	1970 Pop.	1980 Pop.	Previous Experience	Isolation	Types of Projects	Work Force Size Peak Year	Schedule Characteristics	Company Characteristics	Mitigation
Craig,* Colorado	4,200	8,100	Had always expected energy development but experienced none prior to 1974	Relatively isolated-150 miles to any larger town	3 mines, a power plant, uranium mill	800 - mining 1300 - const. & power plant	Rapid growth 1976-1978; growth continued at a slower pace	Multiple large extra-local corporations	Moderate-some temporary housing provided, subdivision eventually built; not all companies participated.
Salina, Utah	1,494	1,992	Local mines, area development; no direct experience with major development or change	Moderate-commuting distance to county seat in Price	Many coal mines located less than 25 miles from town; power plants in adjacent county.	Less than 800 in mines, 1200 in power plants	Moderate growth; informants say no major impact from power plants	Many large extra-local mining companies & utilities; several opened local offices; several did not.	Hire-local policy, slow build-up
Wheatland,* Wyoming	2,498	5,816	No previous experience with energy development prior to the mid 1970's.	Moderate-70 miles to Cheyenne	1,500 MW coal-fired steam plant	2,344 (1979)	Rapid growth and change from 1974 to 1979, followed by slowdown and decline	One major extra-local energy company	Major housing project built; funding provided for new new schools; total package of about $12 million.

TABLE 2-1 (page 2 of 4)

Community[2]	1970 Pop.	1980 Pop.	Previous Experience	Isolation	Types of Projects	Work Force Size Peak Year	Schedule Characteristics	Company Characteristics	Mitigation
Washburn,* N.D.	804	1,767	Experienced a small amount of coal development but no major energy-related projects prior to 1975	Low - near to 2 larger towns & many small towns	Coal mine & 1,000 MW power plant	2,398 (1978)	Rapid growth from 1975-1978; continued growth slower rate	Two extra-local energy companies joined in one common project	No mitigation by energy companies; nearby communities absorbed some of the impact.
Price,* Utah	6,218	9,086	History of coal mining as major economic activity along with the railroad	Moderate-it is the largest center in the region	Expansion & development of existing coal mining operations	2,100 mining, 1,400 const. and power plant	Steady growth throughout the 1970's with 1974-1977 the most rapid growth years	Multiple large extra-local coal/energy companies	No mitigation by energy companies; town undertook extensive programs for construction & growth control.
Rangely, Colorado	1,591	2,113	Major boom in 1940's related to oil exploration & development	Relatively isolated - 150 miles to Grand Junction	Oil shale development; oil & gas drilling; new coal mine; power plant nearby in Utah	NA[3]	Steady growth for last 7-8 years; has not reached leveling off phase	"Experimental" companies; many energy corporations; one large extra-local company involved with the power plant construction	No mitigation by by oil shale or or oil & gas companies; coal mine developer negotiated $15 million

TABLE 2-1 (page 3 of 4)

Community[2]	1970 Pop.	1980 Pop.	Previous Experience	Isolation	Types of Projects	Work Force Size Peak Year	Schedule Characteristics	Company Characteristics	Mitigation
Douglas,* Wyoming	2,677	6,030	Dave Johnston power plant constructed near Glenrock, but no major impact on Douglas; some energy development in the county	Moderate - Casper 50 miles away	Uranium mining & milling; coal mining; oil & gas drilling & refining	1,568	Rapid growth in 1970-1971, then decline; rapid growth 1973-1979 and then unexpected decline in 1981	Multiple large extra-local energy companies	No mitigation by energy companies except some uranium companies which guaranteed housing sales for developers
Grants, N.M.	8,768	11,500	Extensive previous experience with coal & uranium development	Moderate; 2 hours via Interstate to Albuquerque	Many uranium mines & mills & coal mines approx. 15 miles from town; proposed power plant	Approx. 3,000	Large build-up 1970-1979, then rapid unexpected collapse	Multiple large extra-local corporations	Moderate; some assistance and housing for workers in town; hire-local policy on land grants & reservations that reduced population influx.
Forsyth,* Montana	1,873	2,553	Town is railroad division point; coal mining 25 miles from town	Moderate; 45 miles to Miles City	Surface mine & 4-unit power plant	2,000 (1975) 3,200 (1982)	Rapid growth, rapid drop, pause; rapid growth, rapid drop	One major corporate group reponsible for all development; state company, major office in Colstrip, none in Forsyth	Major multidimensional mitigation effort by establishing entire community at project site greatly reduced impact after 1974-1975.

TABLE 2-1 (page 4 of 4)

Community[2]	1970 Pop.	1980 Pop.	Previous Experience	Isolation	Types of Projects	Work Force Size Peak Year	Schedule Characteristics	Company Characteristics	Mitigation
Ashland, Montana	400	400	No experience with energy-related development	Geographically isolated from the rest of the county	None	NA[3]	No fundamental changes during the study period.	NA	NA

---

[1] Descriptions are relative to other study communities, not some absolute scale.

[2] Asterisk indicates county seat. (Grants, N.M. was not the county seat at the time this study was completed but became the county seat in 1981 when a new county was established. Ashland, MT is unincorporated.)

[3] NA - not applicable

Source: Individual community reports prepared for this project.

Moffat County, Colorado - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	606	562	534	535	500	489	485	499	493	442	498
Mining	196	258	272	280	197	236	308	586	955	767	710
Construction	97	89	75	115	144	281	690	944	1,243	995	504
Manufacturing	101	104	88	84	82	111	123	120	131	329	258
Transportation and Public Utilities	148	183	213	248	271	230	183	172	191	343	486
Trade	400	363	438	474	520	660	792	978	1,155	1,243	1,360
Finance, Insurance, and Real Estate	53	51	51	59	72	94	123	141	157	174	183
Services	233	244	234	275	339	345	314	283	379	510	546
Government	552	546	529	570	623	691	718	786	816	900	947
Miscellaneous	378	374	394	399	410	495	590	662	691	795	821
Total Employment	2,764	2,774	2,828	3,039	3,158	3,632	4,326	5,171	6,211	6,498	6,313

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Rio Blanco County, Colorado - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	379	351	335	337	319	311	310	315	312	285	316
Mining	331	293	221	304	341	347	359	533	619	1,157	1,762
Construction	144	191	92	109	126	96	94	115	174	182	167
Manufacturing	13	281	26	33	33	36	26	22	34	29	30
Transportation and Public Utilities	117	96	98	111	109	129	132	149	171	197	248
Trade	358	209	213	212	223	250	272	290	329	336	371
Finance, Insurance, and Real Estate	17	22	40	38	42	41	44	48	53	55	55
Services	254	121	170	166	158	132	139	147	143	170	198
Government	523	538	547	569	607	653	662	666	706	768	760
Miscellaneous	299	298	292	284	298	322	309	296	326	370	383
Total Employment	2,435	2,400	2,034	2,163	2,256	2,317	2,347	2,581	2,867	3,549	4,290

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Carbon County, Utah - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	242	233	215	211	208	217	211	211	213	206	210
Mining	990	1,072	1,044	1,042	1,090	1,373	1,748	1,712	1,665	2,210	2,329
Construction	132	97	121	149	200	233	244	283	324	307	337
Manufacturing	191	180	213	251	283	278	255	296	301	308	282
Transportation and Public Utilities	489	509	517	494	506	545	599	655	678	692	713
Trade	941	1,007	1,043	1,161	1,175	1,194	1,354	1,454	1,612	1,771	1,759
Finance, Insurance, and Real Estate	138	139	143	153	176	284	229	254	240	243	246
Services	419	405	463	678	747	765	811	845	979	1,170	1,297
Government	1,393	1,444	1,482	1,531	1,602	1,660	1,659	1,788	1,901	1,894	1,840
Miscellaneous	480	488	481	485	554	512	551	557	588	627	643
Total Employment	5,415	5,574	5,722	6,155	6,541	7,061	7,661	8,055	8,501	9,428	9,656

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Sevier County, Utah - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	779	743	679	651	628	661	645	641	649	621	639
Mining	36	46	53	47	63	143	208	292	289	268	426
Construction	71	86	123	157	275	265	390	353	362	475	327
Manufacturing	507	515	456	459	524	476	466	463	505	537	474
Transportation and Public Utilities	134	137	152	161	174	197	236	246	243	258	278
Trade	811	902	932	964	1,017	1,076	1,147	1,187	1,213	1,148	1,088
Finance, Insurance, and Real Estate	69	73	83	99	114	118	123	139	149	154	143
Services	360	387	421	450	464	456	510	531	544	648	653
Government	903	928	928	952	983	1,022	1,079	1,156	1,195	1,268	1,266
Miscellaneous	442	467	467	466	473	580	621	682	767	815	839
Total Employment	4,112	4,284	4,294	4,406	4,715	4,994	5,425	5,690	5,916	6,192	6,133

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Valencia County, New Mexico - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	883	892	903	922	926	898	899	947	975	1,051	1,024
Mining	867	882	858	915	1,110	1,434	1,873	2,328	2,539	2,879	3,176
Construction	365	292	368	504	410	554	526	680	945	1,262	1,143
Manufacturing	310	301	333	214	257	276	302	270	292	345	288
Transportation and Public Utilities	914	858	840	881	883	874	924	895	960	1,034	1,012
Trade	1,282	1,390	1,433	1,551	1,651	1,897	2,066	2,275	2,485	2,697	2,570
Finance, Insurance, and Real Estate	225	261	378	415	433	420	430	447	502	511	481
Services	1,254	1,388	1,509	1,389	1,299	1,219	1,211	1,215	1,290	1,376	1,446
Government	2,207	2,466	2,599	2,758	2,896	3,056	3,199	3,297	3,488	3,732	3,819
Miscellaneous	781	831	934	956	1,083	968	992	1,047	1,105	1,203	1,228
Total Employment	9,088	9,561	10,155	10,505	10,948	11,596	12,422	13,401	14,581	16,090	16,187

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

McLean County, North Dakota - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	1,758	1,734	1,661	1,623	1,603	1,576	1,575	1,533	1,549	1,524	1,515
Mining	23	19	6	28	24	15	50	66	123	160	198
Construction	179	202	183	257	228	300	555	1,083	1,667	1,140	386
Manufacturing	37	47	50	46	51	45	42	42	53	65	55
Transportation and Public Utilities	72	67	70	74	75	96	109	181	226	329	355
Trade	478	484	475	508	537	571	628	654	715	733	724
Finance, Insurance, and Real Estate	41	42	61	64	69	74	76	87	87	100	108
Services	523	535	452	463	493	534	561	593	644	679	655
Government	966	947	926	900	909	868	805	772	796	800	798
Miscellaneous	498	471	462	469	522	459	456	493	495	546	558
Total Employment	4,575	4,548	4,346	4,432	4,511	4,538	4,857	5,504	6,355	6,076	5,352

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Converse County, Wyoming - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	542	530	519	509	505	521	518	500	501	530	530
Mining	154	229	242	298	423	674	876	1,212	1,452	1,792	2,260
Construction	177	403	352	144	191	307	419	545	442	501	565
Manufacturing	19	18	16	20	39	44	41	55	65	64	71
Transportation and Public Utilities	219	258	354	355	346	388	417	431	448	431	498
Trade	337	365	354	366	436	539	619	792	893	992	1,055
Finance, Insurance, and Real Estate	56	53	61	76	81	103	109	111	129	146	175
Services	215	231	237	237	271	304	367	349	395	349	403
Government	562	612	619	684	726	760	816	870	929	986	1,079
Miscellaneous	363	350	363	347	402	488	556	700	598	818	843
Total Employment	2,644	3,049	3,117	3,036	3,420	4,128	4,738	5,565	5,852	6,609	7,479

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Platte County, Wyoming - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	742	752	763	769	789	814	806	786	788	831	831
Mining	252	256	259	269	291	301	292	325	336	370	251
Construction	101	103	41	60	75	128	213	249	753	1,223	1,081
Manufacturing	41	43	52	66	73	77	84	70	81	85	82
Transportation and Public Utilities	169	160	161	163	177	172	181	183	201	227	235
Trade	410	451	442	459	511	550	576	612	733	793	797
Finance, Insurance, and Real Estate	42	48	54	54	61	71	77	88	89	110	115
Services	281	302	274	245	242	262	273	307	453	504	568
Government	592	661	694	708	713	700	705	709	716	763	823
Miscellaneous	320	343	345	346	424	465	483	547	561	642	672
Total Employment	2,950	3,119	3,085	3,139	3,356	3,540	3,690	3,876	4,711	5,548	5,455

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Rosebud County, Montana - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	678	689	677	666	687	662	607	568	571	616	604
Mining	43	79	104	269	281	390	416	403	426	394	446
Construction	29	25	39	76	180	1,358	656	345	267	282	780
Manufacturing	214	230	265	192	181	160	146	52	47	138	149
Transportation and Public Utilities	184	181	192	193	212	213	226	241	246	264	294
Trade	216	242	269	312	346	411	425	367	400	431	484
Finance, Insurance, and Real Estate	19	26	37	43	49	50	62	62	60	66	83
Services	397	530	583	757	865	872	934	1,005	1,078	1,035	1,035
Government	464	486	505	539	604	666	681	699	726	745	750
Miscellaneous	243	269	261	262	326	396	453	429	438	446	454
Total Employment	2,487	2,757	2,932	3,309	3,731	5,178	4,606	4,171	4,259	4,417	5,079

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

San Juan County, New Mexico - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	636	618	601	589	572	551	552	584	600	642	630
Mining	1,294	1,403	1,493	1,778	2,031	2,283	2,135	2,526	2,968	3,257	4,255
Construction	1,241	1,717	2,009	1,949	2,499	2,884	3,320	4,221	4,852	4,239	4,953
Manufacturing	1,431	1,318	1,281	1,745	1,596	915	915	1,122	1,453	1,592	1,317
Transportation and Public Utilities	1,846	1,867	1,911	2,011	2,175	2,318	2,525	2,810	3,228	3,551	3,653
Trade	2,671	2,941	3,201	3,599	3,840	4,357	4,670	5,274	5,632	5,725	5,745
Finance, Insurance, and Real Estate	350	379	414	447	540	598	687	742	804	845	850
Services	1,683	1,817	1,990	3,012	4,012	4,794	5,841	7,425	7,969	8,744	7,432
Government	3,639	3,882	3,926	4,085	4,292	4,491	4,685	4,778	4,954	5,107	5,221
Miscellaneous	1,051	1,130	1,279	1,304	1,459	1,504	1,530	1,703	1,693	1,815	1,858
Total Employment	15,842	17,072	18,105	20,519	23,016	24,695	26,860	31,185	34,153	35,517	35,914

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Oliver County, North Dakota - BEA Employment, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Agriculture	544	535	510	496	490	480	482	466	473	465	463
Mining	90	35	36	39	58	37	55	55	61	63	117
Construction	160	22	10	12	94	329	656	373	142	116	181
Manufacturing	0	0	0	0	0	0	0	0	10	9	8
Transportation and Public Utilities	67	78	79	74	74	71	81	103	115	120	223
Trade	56	60	29	29	30	40	78	72	54	60	41
Finance, Insurance, and Real Estate	0	0	0	1	2	2	2	2	2	2	2
Services	17	17	24	22	22	21	31	39	30	32	21
Government	133	119	114	113	125	129	126	131	144	146	162
Miscellaneous	74	41	42	38	41	47	46	40	41	42	42
Total Employment	1,141	907	844	824	936	1,156	1,557	1,281	1,072	1,055	1,260

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, April, 1982.

Case No. 1: Craig, Moffat County, Colorado

I. The Community Prior to Development

Craig is located on the scenic Yampa River in remote northwestern Colorado, about 200 miles west of Denver. Since Craig is over 150 miles from any town larger than itself, it has long been a retail trade center for northwestern Colorado and parts of Wyoming and Utah.

The town was incorporated in 1908, and has been expecting an energy boom since its inception. Because energy resources were present, the town has always been on the verge of a coal, oil or uranium boom which never occurred prior to 1974. It was primarily cattle and sheep country, with a little coal mining and farming, and a small stable base of retail trade and a few professional services.

Population growth from 1910 to 1970 was slow and stable; the town grew from a few hundred to 4,200 people in 1970. People were relatively homogeneous in terms of wealth and lifestyles. Extremes in wealth were rare and people at different levels were similar in their patterns of recreation, dress and consumption.

Craig, like many similar agricultural towns in the West, had a limited resource base. Large ranches were the major source of new dollars, so banks and public officials catered to them as the mainstays of the economy. Major organizations were livestock organizations, the usual local businessmen organizations, and the BLM and Forest Service. The latter two were significant to the economic base and for extra-local linkages because of the large amount of federally owned land in the county.

County leadership was dominated by ranchers. Prior to 1974, all three county commissioners had always been ranchers. Because of their economic importance to the community, ranchers heavily influenced policy and leadership in all spheres.

Within Craig, public offices were held primarily by business people and professionals. They, of course, had a split allegiance between agriculture and wanting to attract other industry, but they catered to agricultural needs and interests in the absence of other strong industries.

Prior to the growth, local residents perceived Craig as a good town in which to live and raise a family. Because there were economic concerns, local leaders tried repeatedly to attract more industry to increase the economic base. Clearly, almost no one, and certainly no one in a leadership role, was going to oppose any industrial development. If the community had a shared purpose, it was that the energy boom would come someday.

II. Description of Energy Projects and Summary of Project Inputs

A. Projects

(1) Trapper Mine (Utah International), 1977
(2) ColoWyo Mine, 1977-78
(3) Empire Energy Corporation (Amoco), 1977-78
(4) Yampa Project (Colorado Ute Electrical Assoc.), 1974-1981
(5) Uranium Mill (Union Carbide), reopened in 1975

The three mines and the power plant are all several miles south of Craig, and are all clearly visible from the town. The mill is located 30 miles west of Craig.

B. Direct Project Mitigation Activities by Project Developers

(1) Trapper Mine -- prepaid $500,000 in mineral royalty taxes; financed development of a 33-home subdivision; purchased KOA Trailer Park, increasing it from 36 to 69 spaces.

(2) ColoWyo Mine -- offered to pay for a full-time impact coordinator but the city did not accept the offer; arranged for a developer to build a subdivision for housing for secondary employees but the developer failed to produce and the company lost about $500,000. The subdivision was eventually completed, but behind schedule.

(3) Empire Energy Corporation -- no major action.

(4) Yampa Project -- provided information to the city and county from the outset of its project. They built a large mobile home park which housed about 75 percent of their

construction work force, and donated to the town several miles of sewer trunk line worth several million dollars.

III. Phases of Development

A. The Pre-Growth Period: 1972 - 1976

During this period there was discussion and planning for the growth to come. Groundbreaking on the Yampa Project was in 1974, but many people were skeptical of the growth projections, and the City Council was ineffectual in preparing for growth. The mayor, the city clerk, and two council members were accused by many locals of being derelict in preparing for growth. The Mayor and two council members were voted out of office in 1975, and the clerk was replaced. From then on, cooperation among the city, the county, and industry improved, and preparations for growth were better.

B. Rapid Growth and Period of Crisis: 1976 - 1978

The population in Moffat County went from 7,200 in 1976 to about 11,000 in 1978. The housing shortage became acute with people living in recreational vehicles and tents. Upheavals occurred in several local service agencies; conflicts occurred between merchants and workers. Public and company officials struggled with problems of providing and financing services. New business establishments opened and a shopping mall was built; services were expanded. In brief, an adaptation by the community to the new systems of social and economic life was worked out.

C. The Leveling Period: 1978 - 1981

The third phase was a cooling down time. The population continued to grow (Craig grew from 4,200 in 1970 to 8,100 in 1980), but the main basis of growth - construction on the Yampa Project - was reduced. The first units were completed in 1979 and 1980, and there was a delay in beginning work on the third unit. As construction employment declined after 1978 and few new developments occurred, leaders and others who had invested in various ventures during the growth period began to be concerned about the future of the community's economic base. However, social change stimulated by the growth continued to occur in a number of areas of community life.

IV. Changes in Community Resources

A. Mitigation Activities

An "Energy Impact Committee" was formed by representatives of four companies, one member each from county and city governments, and one citizen at large. This group surveyed needed facilities, equipment, financing possibilities, and strategies of cooperative action. Recommendations were made to the county commissioners and to the city council.

By 1975, company, county, and city officials agreed that the major problems to be resolved would be housing and financing for public services. It was assumed that company action would result in more or less adequate housing being available for the majority of construction workers. Neither industry nor local government took the initiative to provide additional housing for others attracted by the growth, so housing for service workers developed into a major unsolved problem.

B. Private Investments

Private investment was constrained by a combination of high interest rates, conservative local lending policies and the reluctance of outside institutions to invest in a still uncertain development. Even among the local citizenry, uncertainty and disbelief were reported as having been the most widespread responses to the news that development was about to occur. However, several respondents indicated that some local business people took advantage of the immediate pre-growth period to identify private investment opportunities.

C. Housing

Available housing in Craig filled quickly as workers began to arrive in large numbers in the winter of 1975-76. Most of the construction workers were able to find housing in Shadow Mountain

Village or in the town. Transient workers, and those seeking work, tended to occupy more temporary housing in the old KOA campground and in quickly constructed private campgrounds.

D. Merchants and Workers

A company official, reflecting on the problems associated with change, named the treatment of employees by town merchants as one of the major problems. Because of bitter memories of those first few years, the employees of his company, including permanent staff, continue to do an estimated 60 to 70 percent of their shopping outside Craig.

E. Service Demands

During the period of rapid growth, demands for many services increased. Changes occurred in the provision of several services, notably in police services, welfare, mental health, education, and services for the elderly (especially housing). Additional state support was received through energy impact assistance programs.

School enrollment increased rapidly during the growth period. Earlier improvements to the school plant had made it possible for the first stage of growth to be absorbed, but by mid-1976 it was apparent to many observers that a new high school was needed. A bond issue for school construction was put to the voters and was defeated twice before finally being approved in 1978.

A federally supported housing project for the elderly was developed during the growth period. The elderly were the group most frequently named in response to the question of who suffered most from the growth. Those who moved into the special housing were frequently mentioned as exceptions to this.

The need for additional community recreation services was recognized early in the growth period, but to date no new public recreational facilities have been built.

F. The New Economic Climate

Transition from a community life based on agriculture to one based on agriculture and energy development ultimately caused changes in the social structure. A major consequence of this transition involved increased adaptation to and dependence upon growth. "Shiftwork" and "layoffs" were new experiences for the people of Craig. As employment in energy projects declined with the completion of the Yampa plant, the housing shortage became a housing surplus. And concern over the economic future of the community increased.

As a consequence, support for development projects increased. Signs supporting the proposed dam construction project near Craig were on display in most businesses and government offices by late 1981, and leaders and officials talked with cautious optimism about hopes for the proposed synfuels plant, the coal-slurry pipeline, various railroad projects, and increased markets for coal and other natural resources.

V. Changes in Social Organization

A. Diversity/Complexity

Energy development contributed directly and substantially to increased differentiation of social organization in Craig. The economy became more diversified. The population doubled during the 1970's and became more heterogeneous in age structure, occupations, lifestyles, values, and cultural and geographic backgrounds. Specialized groups and related services emerged; leadership roles became more professional and more highly focused. The power structure became more diverse and interactive. Rules and enforcement of rules governing public behavior became more formal and impersonal.

B. Outside Linkage

Connections between Craig and the outside world changed and increased as the importance of the energy development and export economies increased. Outside firms have come to play major roles in the local economy. The flow of external funds into Craig has increased greatly, along with accompanying demands and restrictions. Newcomers have brought ties to places, people, firms, and cultural traditions into Craig, expanding extra-local linkages. News of the national and international economies has become more of a topic of conversation and a focus in local decision making than formerly was the case.

C. Distribution of Resources and Power

The stratification structure of Craig has been altered most clearly by the diversification of interests and groups. There is no longer a single coherent hierarchy dominated by ranchers and oldtime businessmen. Now there are multiple, overlapping hierarchies of status, differentiated by occupation, length of stay in the community, and lifestyle preferences. Traditional status assignments have become less binding, and more opportunities have arisen for women and young people in the community.

D. Coordination/Cooperation

The older bases of integration in Craig have been substantially altered. A more emergent, interactive basis of integration has appeared, one less bounded by the immediate locality but manifested in the involvement of diverse groups in distinctively local public affairs. A phase of social separation of various groups during the early part of the rapid growth period has given way to a dynamic process of intergroup and interpersonal negotiation in the creation of a new sense of community. A sense of common identity and pride has emerged among many segments of the population, founded mainly in the common perception that Craig has more or less successfully coped with a major event--energy development--and, as a result, is a more exciting, progressive place to be.

VI. Social Well-Being in Craig: Normative Assessment

A. Access to Resources

Per capita income increased more rapidly in Moffat County during the 1970's ($3,079 in 1970 to $9,148 in 1978) than in Colorado as a whole ($3,855 to $8,114). Investment capital, tax revenues, and personal income increased. Jobs became more plentiful, especially jobs with relatively high wages. Diversification of the export base has contributed to greater long-term security than did the more limited, though relatively stable, agricultural base.

Services are more adequate now in Craig than they were before the process of energy development began. There is much greater variety of retail services, and the services provided by local government are of higher quality now than ever before. Streets, utilities, police protection, housing, schools, medical care, and human service agencies and programs have been improved.

B. Behavior Changes

The police chief in Craig believed there was an increase in both the absolute number and rates for most types of crime; Federal Uniform Crime Reports (FBI data) confirm this. There were increases in burglaries, aggravated assaults, larceny and motor vehicle thefts; increases in homicide, rape and robbery were extremely small. The police chief, however, maintained that the increases in overall crime were due almost entirely to increased enforcement activities.

According to the mental health director, there did not appear to be any serious increase in "psychiatric" disorders in Craig. The director indicated there was an increase in "transitional" problems of adapting to crowding, stress, and changes in lifestyle. He said these adjustments did not appear to result in psychiatric disorder, but rather, could be called "problems in living".

Excessive drinking was perceived to be a problem among old-timers and newcomers alike. However, many respondents believed alcohol was already a major social problem for both groups before growth occurred.

The crude divorce rates for Moffat County went from about 1.7/1,000 in 1970 to 11.2/1,000 in 1978, declining to 8.5/1,000 by 1980. This suggests that the stress on families in growth periods leads to an increase in family disruption, but changes in the distribution of marital status and age account for part of this increase.

Child neglect and child abuse were believed by some respondents to have increased dramatically in Craig and Moffat County, but no data are available to measure this trend. According to the social services director, when growth started the department began receiving more complaints of child abuse and neglect, with a few alarming cases of physical abuse. More recently, there have been an increasing number of reports of incest, now involving about 65 percent of the agency's caseload.

C. Perceptions of Community Well-Being

There appears to be little doubt that social cohesion was reduced during the peak of energy development, but the situation never reached what could be called anomie or extreme disorganization. The diversity of life in Craig today--though it remains a quiet country town in comparison to much of modern society--could not have been integrated by the mechanisms of solidarity which held Craig together in the 1960's. It appears that a new basis of solidarity in a more open system has emerged.

The community through this transition has retained a great deal of autonomy (in the sense of local decision making having a major effect on local change). There is no evidence that the companies which participated in the energy development have come to dominate local government or even, as a cohesive force, to dominate the local economy. These companies clearly represent major forces in the present structure, but the ranchers also are a major force and there are several other forces in the present community. None of these dominate the field at present. The interaction among relatively diverse, respectively powerful forces, provides the emergent integration which is the essential basis of community cohesion in Craig. These forces come together to form a powerful base from which Craig's autonomy as a community can be expressed.

VII. Summary of Major Findings: Craig, Moffat County, Colorado

One: Uncertainty about development was a major problem. Because several other projects had failed to materialize in Craig, residents were legitimately reluctant to make preparations, and valuable lead time was lost.

Two: Like most western towns, Craig's revenue sources were and are not sufficient. The town needed more money sooner for sewer, water and street expansion.

Three: Cooperation between city, county, and industry officials was relatively good once the city administration was replaced in 1975. Colorado-Ute and Utah International appear to have done a good job of giving the community advance warning and providing information.

Four: In terms of social organization, Craig was more differentiated in 1981 than in the previous decade, and can thus satisfy a wider variety of needs and interests. The stratification system is more open--more people have more access to political power and economic resources than any time in Craig's history. Extra-local linkages have increased, with short-run positive effects but with some possible long-run negative effects. Local officials have more contact with and access to state and national leaders and resources. Company officials have access to non-local knowledge and power which can be used to help the community, but which can also lead to a loss of local autonomy.

Five: A major negative impact was the unfriendly attitude of some local residents and businessmen toward newcomers. This appears to be one of the most negative problems identified by all respondents.

Six: In this study it was impossible to tell how great the negative effects were on the well-being of some individuals. Is it possible that profound, perhaps avoidable, suffering occurred in Craig but was missed either by the researchers insistence upon hard evidence or by the biases of interviewers and respondents. Potential disruption of the well-being of people in the rapid growth phase of energy development is one of the major justifications for doing impact assessments. Research, focused specifically in this area, is badly needed.

Seven: In answer to the ultimate question, "Was energy development good or bad for Craig?", we would have to say it was good. If asked to vote yes or no, as to whether accept such development again, a definite majority of citizens both old and new would say yes. But management of the growth could clearly be improved, and this would be the request of most citizens.

Case No. 2: Rangely, Rio Blanco County, Colorado

I. The Community Prior to Development

The town of Rangely is located in Rio Blanco County in northwestern Colorado. There are only two towns in the county: Rangely, in the western portion and Meeker, the county seat, in the eastern part. Founded in 1889, Rio Blanco County was mainly an area used for raising livestock.

In the mid 1940's, when the demand for petroleum products spurred oil exploration and development in the area, Rangely became a "tent city". During this early developmental period, the town's population expanded to its highest level, with an estimated 5,000 residents. After the initial frenzy of exploration and drilling, the population of Rangely decreased dramatically until, in 1950, there were only 808 residents. However, mining and other energy-related industries remain the dominant economic activity in Rio Blanco County.

Meeker has historically been the center for agricultural and administrative activity in the county. Prior to the 1940's, Rangely was relatively insignificant in county politics. Following a period of long-term steady growth, Rangely's 1980 population was 2,113; the population of Meeker was 2,356. This growth has enabled Rangely to establish itself as a political and economic power within the county. Representation on the county commission seems to be equally distributed, as are positions on the county's planning commission.

Rio Blanco County can be divided into two distinct districts. The eastern portion is dominated by Meeker and traditional agricultural interests, while Rangely dominates the western part of the county and is more oriented to energy-related development.

Ethnically and culturally, Rangely and Rio Blanco County were very homogeneous. The population of the area was overwhelmingly white and it appeared that tolerance for ethnic and cultural diversity was not very high.

II. Description of Energy Projects and Summary of Project Inputs.

A. Projects

In the early 1970's, the federal government leased two oil shale tracts (C-a and C-b) in Colorado, two tracts in Utah, and two tracts in Wyoming. Tracts C-a and C-b are located in Rio Blanco County halfway between Rangely and Meeker in the Piceance Basin. However, the magnitude of impact from oil shale development has been much less than was originally anticipated.

Then, in the mid 1970's, greater demand for oil and the deregulation of oil prices resulted in increased drilling activity in the oil field near Rangley. Although several companies are drilling in this field, Chevron has taken over the management of the "oil patch". Other companies are also drilling in an area south of Rangely for both oil and gas.

The most recent energy development to occur in the Rangely area is the planned construction of the Deserado Mine, a coal mine, and the Moon Lake Power Plant Project, a coal-fired power plant. The coal mine is located just north of Rangely, and the power plant is being built near Bonanza, Utah.

B. Direct Project Mitigation Activities by Project Developers

There have been virtually no mitigation activities by the various companies involved in developing the oil shale tracts and in drilling for gas and oil. Rio Blanco Oil Shale, which leased tract C-a, has claimed exemption from local mitigation because their development is "experimental". Chevron's impact has been "indirect" because of the unique hierarchy of employer/employee relationships involved in the contracting process. Unlike most energy impacted areas, development has been carried out by many different companies in various capacities; there has been no major company with whom to negotiate mitigation settlements.

Recently, a mitigation settlement was negotiated at the county level with Western Fuels, the company that will construct and operate the Deserado Mine. Because of the decision to locate the power plant in Utah, local officials had feared they would inherit the negative aspects of the project without receiving the benefit of an increased tax base. The mitigation package, which was required before the County's Special Use Permit could be issued, totaled approximately $15 million. Specific expenditures by Western Fuels include $1,515,000 to the town of Rangely, $876,000 to the Rangely Hospital District, $820,400 to the Western Rio Blanco Recreation and Park District, $120,000 to the Rangely Fire Protection District, $105,000 to the Rangely Regional Library, $1,500,000 to Rio Blanco County, and a $3,375,000 deferred payment to Rangely for future expansion of sewer and water facilities. The agreement further provides payment of $60,000 per year to the county and $25,000 to Rangely for monitoring changes attributable to development.

III. Phases of Development

Rangely has been experiencing energy-related changes since the 1940's. The most recent surge of development has occurred since 1973, when the Arab oil embargo focused national attention on development of domestic energy supplies. With its deposits of oil, gas, oil shale, and coal, the Rangely area has become a significant energy-producing center. Energy-related growth has been fairly steady over the past seven or eight years, but the impact from the various operations in the county has had a cumulative effect on the community of Rangely.

Development in the area has not reached the leveling off phase yet. In early 1982, there continued to be a great deal of drilling in the oil and gas fields and construction of the Deserado coal mine had just begun. Also, associated with the mine, is construction of a pipeline to the power plant. Thus, Rangely will experience continued energy-related growth for some time to come.

IV. Change in Community Resources

A. Mitigation Activities

Mitigation activities were discussed in Section II.

B. Citizen Response

Anticipating rapid growth, the state of Colorado established an

Oil Shale Trust Fund to assist communities affected by oil shale development. Rio Blanco County formed a special task force to make recommendations to the state on how this money should be spent, and the eastern and western halves of the county have advisory groups to the task force. Rio Blanco County will receive approximately $16 million through the trust fund.

C. Private Investments

A few new businesses have been opened in Rangely, but private investment has been greatly restricted by the unavailability of land. Most of the land around Rangely is owned by the Bureau of Land Management (BLM) and the rest is controlled by a small group of local landowners. This "monopoly" on land has allowed these landowners to ask premium prices for land in or near the town ($45,000 to $70,000 per acre). Potential investors have generally been unwilling to pursue commercial or residential development at these prices.

D. Housing

The most salient issue in Rangely is a crucial housing shortage caused mainly by the constricted supply of land. In an effort to alleviate this problem, BLM was requested to sell the town 105 acres for a residential housing development. This request quickly became the source of conflict between the landowners and the majority of Rangely residents. The landowners felt they had a right to make an "honest profit" on their land, but the other residents felt the assessed valuation of the BLM land ($5,000 per acre) more accurately reflected the value of land around Rangely.

BLM has approved the land transaction and the town is now in the process of determining how best to develop the land. In addition, BLM has indicated that more land will be made available to ensure reasonable land prices and orderly development in the future.

E. Merchants and Workers

The town of Rangely has virtually ignored the influx of transient workers to the area. No significant effort has been made to provide fundamental services and facilities to meet the needs of these workers. One official indicated that transients were not welcome - they weren't the type of newcomers Rangely wanted. As a result, the transient population is angry and frustrated.

F. The New Economic Climate

The amount of growth originally anticipated from oil shale development did not fully materialize. However, when the oil and gas drilling companies expanded their operations in the area, the impact of their combined labor force was considerable. With construction beginning on the Deserado Mine, Rangely can expect another surge of growth.

The oil shale operations have not been very predictable or stable; just recently over 500 workers were laid off. On the other hand, Rio Blanco County is the largest energy-producing county in Colorado and the oil and gas drilling should continue for some time. The coal mine, because it has a local market, should contribute enormously to the economic stability of Rangely and the county.

Rangely residents approach the peak impact period with apprehension, expectation and a new determination to resolve the community's problems. Rangely's economic sector will become more diverse and more goods and services will be available. In general, the town's economic future is bright.

V. Changes in Social Organization

A. Diversity/Complexity

The cumulative effects of various types of energy development, both actual and expected, have led to many structural changes in Rangely and Rio Blanco County. Increased political differentiation is evidenced by the creation of the Special Impact Task Force, its two advisory committees, and a new position in the county planner's office. At the municipal level, officials have become increasingly professional. Rangely now employs a full-time administrator and has recently created positions for a financial manager and a housing specialist. Also, the western half of the county has formed a special recreation district and a new taxing district.

To date, Rangely has experienced very little economic differentiation. However, with the acquisition of land from BLM, increased diversity is inevitable. The greatest potential for change in the economic sector lies in the eventual distribution of funds from the mitigation settlement and the county's share of the Oil Shale Trust Fund.

B. Outside Linkages

It is clear that political extra-local linkages in Rangely and Rio Blanco County have increased considerably since the mid 1970's. The changes in both formal and informal linkages are illustrated by the negotiation process which led to the $15 million impact mitigation settlement with Western Fuels. The communication between officials at the federal, state, county and municipal levels resulted in a successful cooperative effort to obtain an acceptable settlement.

Local groups also contacted other energy impacted areas - Craig, Rock Springs, Green River - in an effort to learn from their experiences. This sharing of knowledge was an evolution of the mitigation process resulting in a more comprehensive settlement to improve social conditions in the developmental period.

The presence of a few new businesses and the six oil related service companies has not significantly increased economic extra-local linkages. The coal company, however, is expected to cause many changes in the economic sector. Basin Electric (Western Fuel's founder) has been very successful in bringing in government subsidy money to help fund programs in communities where they have projects.

Socially, the only new link appeared to be the communication between in-migrants and the people from their home areas.

C. Distribution of Resources and Power

The stratification system in Rangely is highly complex, consisting of two major groups, each with distinctive subgroups. The community's two major groups are the permanent residents, both old and new, and the itinerant workers employed in the oil and gas fields.

Access to political positions in county government appears to be limited. The County Commissioners are all male ranchers, whose obvious agricultural interests are reflected in the distribution of resources at the county level. However, it appears that city political positions have become more accessible. In the past, most officials were white males, usually involved in the land monopoly. This has changed considerably over the past five years - the mayor and two council members are female, none are landowners, and at least one is a newcomer.

The itinerant workers, particularly oil field workers, are alienated from the community partly because of their high mobility and partly because of the peculiar occupational stratification system they work under. These individuals are poorly represented in the organizations and processes which distribute resources and, as could be expected, they are severely disadvantaged and even victimized.

Because the restricted access to land has limited population or economic growth, there has been little change in the social and economic stratification systems in Rangely. However, the BLM land trade and the involvement of Western Fuels will eventually result in many changes in both sectors.

D. Coordination/Cooperation

Rangely is not a particularly well integrated community. There appears to be good cooperation at the social, voluntary level, but political integration is only partial and integration in the private, business sector is very poor. Additionally, there has been no effort to integrate the group comprised of oil and gas workers into any area of community life.

The question of land control is still a source of conflict, and has hindered the town's ability to respond to the needs created by energy-related growth. The recent changes in community leadership should help facilitate a resolution of these conflicts. Also, the mining company is acting as a strong integrative force in its efforts to assist the community in preparing for continued growth.

VI. Changes in Social Well-Being

A. Access to Resources

Both per capita and per worker income increased dramatically in Rio Blanco County from 1970 to 1978. The unemployment rate has been steadily decreasing since 1950, while female participation in the labor force has shown a steady increase.

There has been some increase in community services: a new day care center, a new senior citizens center, and a new recreation center. When more economic diversity eventually takes place in Rangely, the likely result will be greater access to resources for most sectors of the community.

B. Behavior Changes

Unlike many energy impacted areas, Rio Blanco County has not experienced any significant rise in the crime rate. In fact, violent crimes against persons (homicide, rape and robbery) have maintained relatively low and stable rates.

Divorce rates increased in Colorado and nationally during the 1970's, partly because divorce become a more acceptable social mechanism. However, the divorce rate in Rio Blanco County has been growing more rapidly than the state rate. The lack of adequate housing and services has certainly been a disruptive factor for families and has made it particularly difficult for housewives to become integrated into the community.

Incidence of suicide in Rio Blanco County does not appear to be a problem. The county suicide rate is relatively typical of the state as a whole and the suicide rate remained stable during the period from 1970 to 1979.

C. Perceptions of Community Well-Being

As stated earlier, there are still major areas of conflict in

Rangely, mostly related to the availability of land. Since the peak impact period is probably still to come, it is difficult to predict how well the community will resolve these conflicts. Currently, there appears to be no cohesive community spirit; residents are somewhat confused and uncertain in their perceptions of the community. However, present city officials are more professional and better able to deal with the disruptive aspects of rapid population growth.

Some local businessmen are fearful of additional competition, and there is great potential for the economic status of the elite landowner group to decrease significantly. But the general population of Rangely should receive many long-term benefits.

VII. Summary of Major Findings: Rangely, Rio Blanco County, Colorado

One: The impact period, beginning in the early 1970's, has been a prolonged stage of relatively steady growth. The peak impact period is still to come.

Two: Cooperation between officials at all levels of government was instrumental in the successful negotiation of the mitigation settlement with Western Fuels. The additional monies available to Rio Blanco County from the Oil Shale Trust Fund will also alleviate many impact-related problems.

Three: The most controversial issue in Rangely has centered around land control. The BLM land sale has effectively broken the stalemate between the landowners and the residents.

Four: The unavailability of affordable land was the main cause of the housing crisis and also stifled economic growth in Rangely. Both of these situations will begin to turn around as residential and commercial development increases.

Five: In terms of differentiation, the greatest amount of change has occurred in the political sector at both the county and municipal levels. Many new positions have been created and they are being filled by professionals.

Six: A major negative aspect of the growth has been the conflict between the itinerant workers and the permanent residents. There has been almost no effort on the part of the community to provide the basic goods and services these workers need; the resultant frustration of the itinerant population is often evident in their behavior.

Seven: The continued growth of Rangely will undoubtedly precipitate a number of significant changes. There is great potential for the community to gain long-term benefits from this impact experience; it will be interesting to see how the community eventually evolves.

Case 3: Price, Carbon County, Utah

I. The Community Prior to Development

The community of Price is the largest city in southeastern Utah with a 1980 population of 9,086. It is the trade and service center for Carbon County and the surrounding region.

Price began as a rural, agricultural community. But in 1881, with the decision to route the Denver and Rio Grand Railroad through Price Canyon, coal mining soon became the major economic activity.

The simultaneous development of coal mines and the railroad caused the population of Carbon County to double between 1910 and 1920. But over the next five decades, the demand for coal fluctuated greatly, causing dramatic changes in the county's population level. By 1970, the population of Carbon County had declined to the 1920 level of approximately 15,500 people.

The early miners were of virtually every nationality, making Carbon County the melting pot for the state of Utah. Because of this history, the county is ethnically and culturally very diverse. Social groups in the area are largely defined by ethnic and religious affiliations. The most significant groups in Price have been the Mormons[7], Greeks, and Hispanics.

During the early period of coal development, most of the coal mines were owned and operated by families or small companies. This gradually changed as large corporations bought out the smaller holders. By the 1950's, when the coal production was at a cyclical peak, these companies established numerous "company towns" near the individual mines where many miners and their families lived.

II. Description of Energy Projects

Unlike other energy impacted communities, the recent growth in Carbon County was not caused by the sudden emergence of a new industry. Rather, it was caused by the expansion and further development of existing mining operations along with the construction of generating facilities in nearby Emery County. The most significant changes in the 1970's was that virtually all of the mining operations in the area were purchased by large energy companies; the "company town" concept was abandoned; and the local demand created by the generating facilities gave a sense of stability that had previously been lacking. In 1980, there were 20 mines operating in the Price area, compared to 16 in 1970. Between 1971 and 1980, coal production from these operations increased approximately 277 percent.

III. Phases of Development

The current impact period began in the early 1970's and continued throughout the decade at a fairly consistent rate. Most local leaders, however, define the primary impact period as 1974-1977.

By 1973, as a result of steady growth, there was virtually no housing available, new services and facilities were needed, the schools were filled, and the water and sewer systems were operating at full capacity.

For the next three years, the community struggled to catch up with the growth. During this period, extensive housing construction was undertaken, new mobile home parks were constructed, the water and sewer systems were expanded, new schools were built, and the city expanded its professional staff. By 1978, the community had resolved many of the problems brought on by the boom in the coal industry.

While steady growth has continued since that time, it has been less disruptive. Thus, while the primary impact period continued throughout the decade of the 1970's, it was most strongly felt between 1974 and 1977.

IV. Changes in Community Resources

A. Mitigation Activities

Growth related problems were not as apparent in Price as in some other communities impacted by large energy development projects. This is, in part, a function of the history of Price - in the past the community has responded to periods of rapid growth and its cultural and ethnic diversity has been a critical factor in facilitating the integration of large numbers of newcomers of diverse origins.

The provision of water has been one of the major problems during the recent growth period. A moratorium was placed on new water hook-ups outside Price City in 1974. Within two years, the new Price River Water Improvement District was formed; new lines were established and the distribution problems were solved. However, the cost and availability of water are still a problem.

B. Private Investments

The growth of Price has resulted in the establishment of a number of new businesses, including a number of chain stores. From the perspective of local residents, the new chain stores have meant a greater selection and lower prices. However, some of the small local stores, particularly grocery stores, were unable to compete and have gone out of business.

C. Housing

As is typical in a rapid growth community, the housing shortage in Price is critical. Many of the in-migrants who work in the mines cannot afford to purchase new homes. With the current high interest rates, newcomers who might otherwise have purchased homes are unable to qualify for traditional home loans. These factors have greatly increased the cost of rental housing. However, the bigger problem is finding an available unit. The 1974 moratorium on water hook-ups limited the development of mobile home parks. Currently several mobile home parks are being planned or constructed, which will alleviate some of the pressure.

D. Merchants and Workers

Because of its ethnic and cultural diversity, Price has adjusted very well to the influx of newcomers attracted by the coal industry. There is no visible newcomer-oldtimer split. The one exception to this is the recruitment of miners from Appalachia. Approximately 600 miners have come to the area from Kentucky and West Virginia. About half of these have returned home and many of the remaining "easterners" are experiencing adjustment problems.

E. Schools

While the impact of the population growth on the schools in the Price area was significant, they were able to adjust with only modest problems. Unfortunately, the new Price elementary school burned down near the end of the 1974 school year. The school was rebuilt and opened in the fall of 1975, but a year was lost at a rather critical juncture of the growth period.

The high cost and general unavailability of housing made recruitment of new teachers very difficult. The schools also had problems in retaining teachers, particularly males. A number of male teachers have gone to work in the mining industry because they could make a significantly higher salary.

The secondary school curriculum is putting more emphasis on the development of trade skills since many of the students will become miners or construction workers. However, the existence of high paying jobs in the mines has contributed to an increased high school dropout rate.

F. The New Economic Climate

The big difference in the recent expansion of the coal industry is that many of the major users are now local. The new coal-fired power plants in Emery County (South of Price) constitute a major coal market as will the Intermountain Power Plant now under construction in Millard County, which is west of Price. This implies that the market will be much more stable for a relatively longer period and that the historical boom-bust cycle is less likely to repeat itself.

V. Changes in Social Organization

A. Diversity/Complexity

With the expansion of the local coal industry, local governments became more differentiated. Appointed administrative functions became more specialized and professional. However, elected officials still tend to be long-time residents.

Economically, significant differentiation occurred. A number of new businesses were established, particularly in the construction, trade, financial, real estate and service sectors of the local economy. The larger banking establishments in the state of Utah acquired virtually complete control over the local banks.

In terms of social and demographic characteristics, Price has always been a highly differentiated community. One significant consequence of the recent development has been a change in the age structure of the local population. With the in-migration of a large number of young families, miners now tend to be either in their 50's (oldtimers) or under 30 (new residents).

B. Outside Linkages

During the impact period a number of changes occurred which increased extra-local linkages. The most important of these has been the almost total transfer of local control of the coal mines to extra-local ownership. There has also been a major increase in extra-local control over the retail, trade, finance, and service sectors in Price.

Because the residents in the area were already very diverse, there has been no significant increase in the heterogeneity of the local population. Thus, fewer new social linkages were established than would usually be the case.

C. Distribution of Resources and Power

Price cannot be neatly divided into oldtimer and newcomer groups. The most important social groupings are ethnic groups (particularly the Greeks and the Hispanics) and occupational groups (miners, railroad employees, and businessmen). It appears that no major changes have occurred in the social stratification system. Social prestige and status appear to be based on a combination of occupation and length of residence.

The most important impact of the recent growth on the stratification system is a result of the comparatively high wages that young and relatively untrained mine workers have been able to obtain. The consequence of this is an almost classic case of status inconsistency. Professional people with years of education and experience find they are making less money than high school dropouts.

While the recent expansion of the mining industry has created greater economic opportunities for many, individuals and families on fixed incomes (particularly the elderly) have experienced negative changes on their positions in the community.

D. Coordination/Cooperation

There appears to be a fairly high level of cooperation and coordination among the political entities in Price and Carbon County. This has been facilitated by the key role played by the multi-county Southeastern Utah Association of Governments, which is headquartered in Price.

Major changes have occurred in the economic and business sectors during the impact period. Despite the difficulty that some oldtime businesses have had in competing with the new establishments, there appears to be a high level of cooperation in the business community. Most local businesses are involved in clubs and activities that are mutually supportive of continued expansion. The coal companies are united by their membership in the Utah Coal Operators Association, while the labor union is a strong integrative force for mine workers.

In terms of social integration, there has been a general absence of the negative impact usually associated with rapid population growth. Since a high level of ethnic, cultural and religious diversity was already evident in Price, newcomers attracted little attention because they did not stand out as being particularly different.

VI. Changes in Social Well-Being

A. Access to Resources

Per capita income increased significantly in Carbon County in the 1970's; it now has the highest per capita income of any county in the state of Utah. At the beginning of the impact period, the unemployment rate was relatively high, but it has decreased each year (dropping from 7.9 percent in 1975 to 4.8 percent in 1979).

There is a greater availability and selection of retail goods and prices for these goods have become more competitive. The schools have developed a curriculum with a greater emphasis on vocational education. Medical personnel and facilities in the area have increased and expanded. In general, the recent coal development has had an overall positive effect on resources in Price and Carbon County.

B. Behavior Changes

Like most other energy impacted communities, Price has experienced an increase in crime during the growth period. Both the Carbon County Sheriff's Department and the Price City Police Department have expanded significantly. Both of these offices report that crime has increased more rapidly than the rate of population increase. Much of this is attributed to the transient workers on the power plant projects as opposed to the coal miners.

Law enforcement agencies, social service agencies and school officials all reported an increase in alcohol and drug related problems. There has been an increase in community sensitivity to these problems, which has led to the development of educational programs and workshops.

The divorce rate for Carbon County increased during the growth period. Some of the reasons for this increase are: the additional stress of dealing with change, a lack of adequate housing causing conflict in marriage relationships, and the absence of traditional support systems among the newer, younger families.

During the growth period the number of reported cases of child abuse and neglect increased significantly. It is difficult to know how much of this can be attributed to an increase in the number of actual occurrences and how much is a result of increased reporting, because, in the same period, a large number of new doctors moved to the area and a new system of obtaining referrals was established.

Significant increases in the high school dropout rate were observed in Carbon County during the impact period. This is attributed to the fact that young people can obtain high paying jobs in the mines even without graduating from high school.

C. Perceptions of Community Well-Being

Throughout the growth period, Price has remained a well integrated community. There have been many important changes brought about by the expansion of the coal industry, but many of the problems usually associated with rapid growth have not been as evident in Price and Carbon County.

There was some loss of local autonomy when the mines were purchased by large extra-local companies and when the new chain stores were established. However, the influence of these "outsiders" has been minimal. Politically and socially, there have been no major transitions of power or organization.

Historically, Price has never experienced a prolonged period of stable economic activity, but has always been caught in a cycle of boom-to-bust. While the economic base of the area will remain closely tied to the coal industry, the presence of major local coal markets will give stability to the industry that has been lacking in the past.

The majority of residents perceive the overall effects of energy development in the Price area as positive, both on a personal level and for the community. With the exception of housing, problems were resolved and the transition proceeded relatively smoothly.

VII. Summary of Major Findings: Price, Carbon County, Utah

One: The history of Price and the diversity of its population were the major factors in facilitating the integration of newcomers into the community.

Two: The most critical problems during the rapid growth period were the housing and water shortages. Neither problem has been completely resolved, but progress toward that end is being made.

Three: Cooperation between government entities and in the business community has been very good and transition has been accomplished with a minimum of conflict.

Four: In terms of social organization, there were no major changes in the already highly differentiated community. However, the influx of young workers with families have altered the age structure of the local population.

Five: Extra-local linkage was increased mainly through the transfer of local ownership of the mines to large energy companies and by the establishment of chain stores in the community.

Six: Unlike other communities that have experienced rapid growth, Price could not be divided into the usual oldtimer and newcomer groups. Because social groupings were defined along ethnic, cultural and religious lines and because of the large diversity, no major changes in stratification were evident.

Seven: This most recent surge of activity in the coal mining industry differs from past boom periods in that the coal market is now mostly local and probably more stable.

Eight: The overall effects of the expansion of the coal mining industry on Price have been positive, and the majority of residents perceive it as such.

Case No. 4: Salina, Sevier County, Utah

I. The Community Prior to Development

The community of Salina is located in south central Utah in the northern portion of Sevier County, 125 miles south of Salt Lake City, and is surrounded by mountainous areas which are a part of the Fishlake National Forest. The city of Price is about 75 miles northeast of Salina and is the largest city in southeastern Utah with a population of about 9,000 people. The county seat of Sevier County, Richfield, is located approximately 25 miles southwest of Salina. In 1980, Richfield's population was estimated to be about 5,500 persons.

The communities of Price and Richfield are mentioned because they have historically been important to the development and stability of Salina and have served as places of employment and commerce for its citizens. Thus, the history of Salina and changes in its population are closely connected to developments occurring in these other two communities in the region.

Salina was settled in 1865 as a farming village to serve the surrounding agricultural area. The establishment of coal operations in the 1870's expanded the economic base of the community, but the operations were limited to the local market. A major expansion in Salina occurred during the 1890's when construction of the railroad caused a boom for the area's farming and ranching operations and helped to stabilize local coal operations. Agricultural reorganization in the 1950's and 1960's caused the amount of required agricultural labor to decrease, and the town experienced serious out-migration, especially among young people.

The population of Salina declined from 1,618 in 1960 to about 1,500 in 1970. This out-migration left Salina with a relatively old population, of whom approximately 80 to 90 percent are Mormons. The influence of the Mormon Church in the area is pervasive and has fostered close familial and community ties. Thus, Salina has retained a high level of cultural and social homogeneity. Although coal mining in the Salina area resulted in some in-migration, most of the miners are either residents of Salina or persons who had out-migrated earlier and then returned. Consequently, the development of coal mining has reinforced the existing family, community, and cultural organization rather than creating cultural diversity.

The occupational structure of Salina consisted of agricultural operators (farmers and some ranchers), the associated agricultural laborers, workers in retail and service trades in the community, and a small group of professionals. Because of a lack of significant extremes in wealth, there is considerable homogeneity in lifestyles. The dominance of the Mormon Church in the community has further added to the homogeneity of the area.

Salina, like many of the small farming communities in Utah, has had a limited but adequate resource base. Agriculture and limited coal mining represent the major economic resources available to the community. Public services have been meager but adequate, again similar to other small Mormon communities in Utah. Public services were built up over a long period of time, and the tax levels required to support the services were low. But the level of services available was perceived as being good or at least adequate by the majority of the population prior to development.

Clearly, the dominant organizational force in the community has been that of the Mormon Church. The presence of the Fishlake National Forest has meant that there has always been some organizational effect of the U.S. Forest Service, but the lack of changes in Fishlake National Forest and in Forest Service policy prior to the mid-1970's has meant that this effect has been minimal in the community. Other organizational groups in Salina consist of the usual number of agricultural-related organizations and a few minor civic organizations.

Leadership in the community has been drawn primarily from the members of the Mormon Church. Because of the stability and strong family ties in the area, leadership has tended to be reserved for older members of agricultural families who are active and prominent in the Mormon Church.

Because of the high out-migration of youth during the 1950's and 1960's, the majority of local citizens were highly favorable to development and particularly to the development of coal resources. The development of coal resources posed no particular threat to local residents as coal mining had always been a part of the local cultural and occupational structure. Given the strong dominance of the Mormon citizenry, however, there was concern that there not be a large in-migration of outsiders who were culturally different, non-Mormon, and who might resent or resist many of the traditional Mormon ways of life. Thus, while economic development and growth were probably desired, this desire was accompanied by a strong concern that the presence and viability of the Mormon religion not be seriously altered by development.

II. Description of Energy Projects and Summary of Project Inputs

A. Project Description

Although a number of projects were located in the major coal fields of Sevier, Emery, and Carbon counties during the late 1960's and early 1970's, one mining project contributed the major portion of the effects on Salina. In 1965, Southern Utah Fuel Company (Sufco) purchased an existing (but small) underground mine and adjacent properties from a local family. Sufco became a subsidiary of the Coastal States Energy Company in 1973, and operations at the mine were subsequently expanded. The mine is a joint venture with Getty Resources.

None of the coal resources were in the immediate vicinity of Salina. The Sufco mine is located about 30 miles east of Salina in the Wasatch Plateau coal field. Distance, alternative residential settlements, and poor winter driving conditions minimized the effect of other energy development activities on Salina.

Employment at the Sufco mine rose from approximately 40 workers in 1970 to about 230 workers in 1980. Between 1970 and 1980, the population of Salina grew relatively steadily from 1,494 to 1,992 persons. Throughout this period, the population of Sevier County was also growing, rising from 10,103 persons in 1970 to 14,727 persons in 1980.

B. Direct Project Mitigation by Project Developers

Sufco followed a deliberate policy of moderate expansion and of hiring local residents or out-migrants from the area who wished to return. These two factors substantially reduced the potentially disruptive effects of the growth period.

III. Phases of Development

A. Early Phase: 1970 - 1975

Mining activity and expansion began in 1970, and by 1971 the population had increased by about 20 percent over early 1970 levels. But respondents reported noticing little change until 1973-1974.

There was never a period of really rapid change, and respondents indicated that there was no "boom town" effect. The evidence suggests that the change was slow and gradual and that the community managed the changes in an acceptable manner.

B. The Impact Period: 1975 - 1979

This period was characterized by a reversal of the historic population decline and out-migration. The private business sector was expanded, new housing was built and existing housing improved, and public services were expanded. Most of the problems were successfully resolved. The schools expanded and managed the critical growth problems, but inadequate space was a problem. New planning and zoning initiatives were undertaken, though no new governmental positions in planning were created. To meet the needs for an updated and expanded water system, the tax levy on real property was increased.

Salina did not experience major "social" problems or disruptions common to other communities experiencing rapid growth. Growth in population was not sudden but incremental and geographically dispersed. In addition, the workers who were recruited for the coal mines were primarily residents of Salina or in-migrants who had previously out-migrated because of lack of employment. As a result, the community did not experience "oldtimer-newcomer" conflicts.

The coal mining operations enhanced the social structure of Salina: young people did not out-migrate; intermarriage among residents continued strengthening community social networks; and families were reunited through in-migration. The issues of unplanned housing growth, school overcrowding, and the expansion of public facilities and services were not major issues nor serious ones; they were easily managed and controlled. The changes were small enough for the normal community mechanisms to function effectively.

A clear separation was made by local residents between the impacts from coal mining (generally viewed as positive) and other growth factors - the arrival of a new interstate highway and oil exploration (generally perceived as negative). The fact that the coal miners were primarily Mormon with family ties to the area was a major factor in lessening social impacts. In addition, although Salina was small and rural, coal mining was historically part of the community culture, and mining operations were not alien to local residents; it was an accepted and respected element in the community. Salina was generally able to keep pace with the growth during this phase.

C. The Leveling Phase: 1979 - 1981

Some minor growth was still occurring during this period. Because expansion of the private and public sectors of the economy were not sudden or dramatic, Salina did not experience any significant post-boom decline. Because there was no large in-migration of construction population, there has been no large exodus or decline. The population of Salina is expected to continue growing slightly or will stabilize until the demand for coal changes significantly.

IV. Changes in Community Resources

A. Mitigation Activities

Aside from the policy of slow growth and the hiring of locals, the company was not reported to have undertaken any major mitigative actions, although its management was considered active in support of the community.

B. Private Investments

The mining expansions were not large enough to have major effects on the service sector. Although marginal firms became viable and a few restaurants and hotels relocated to Salina, there was no major expansion of the economy in terms of new businesses. Consequently, competition with established businesses was very limited. This fact reinforced the positive attitudes of the business community toward gradual growth resulting from mining operations in the region.

C. Expansion of Public Facilities

The population growth created demand for more water. The city constructed a storage tank and pressurized irrigation systems to save culinary water. The irrigation system was an area of community contention, but it was approved following a bond election.

The need to hold a bond election or to borrow money (in anticipation of tax revenue) reflected the town's budget problems during the impact period. This was partly a function of the growth and was aggravated by a 20 percent property devaluation which temporarily lowered the community's tax base. The combination of growth-induced expenditures and the devalued tax base resulted in financial difficulties for the local government.

Local response was two dimensional. First, the local property tax rate was raised 10 mills. Second, because the additional growth-induced expenditures could not be met, bonds were issued. This marked a major shift in fiscal policy; prior to the impact period, there had been sufficient revenue to meet budget requirements. The fact that the budget was operating on anticipated revenue was perceived as a major drawback by a number of elderly residents who were interviewed.

D. Housing

Since there were no large apartment/multi-family structures in

Salina, housing rental accommodations were virtually non-existent. This factor was reinforced by the prevailing philosophy of not renting space within one's home. As a result of in-migration, new trailers and mobile homes were scattered throughout the area on vacant property adjacent to family homes. This trend was problematic for the city because single-facility services were used for multiple families, and the water and sewer systems became overburdened. To alleviate this unplanned growth, the city passed a resolution zoning the location of trailers and mobile homes.

To satisfy housing needs, several new mobile home parks were built. To old-time residents of Salina, the mobile home parks were conspicuous, but they were not perceived negatively. New subdivisions were also built in three distinct areas. For those individuals who favored growth or had members of their families move into the new subdivisions, the spatial expansion of the housing sector was a highly positive factor. However, some elderly residents felt that these developments resulted in increased local taxes which was seen as an additional burden on home owners on fixed incomes.

Public housing was also developed in Salina. The town received federal financial support to construct low-income public housing projects. To some residents, such housing was a definite departure from the traditional community value of self-support and self-reliance.

E. Schools

School administrators stated that the school system coped well with the growth. Mine employees were relatively young, with more elementary school-aged children, so the growth was the greatest in the elementary system. Between 1975 and 1981, elementary school enrollments increased from 340 to 591 students. The system, with a capacity estimated at 500, obtained temporary facilities and expanded the teaching staff. While the student-to-teacher ratio of 29:1 was high compared to the recommended standard of 24:1, the problems appear to have been adequately handled. A new high school was constructed in the mid 1970's, substantially expanding the system's capacity at the high school level, where the student-to-teacher ratio was maintained at about 21:1 throughout the study period.

The fact that many of the miners were Mormons who had returned to Salina or were local residents meant that cultural barriers in the school were not a serious problem. The level of community involvement in school activities was consistently high. This participation was an important coping and planning mechanism.

V. Changes in Social Organization

Because the population growth in Salina was relatively small, gradual, and spread evenly over the decade, the changes in social organization were not significant.

A. Diversity/Complexity

In Salina there was no apparent increase in formalization or centralization of local government functions or expansion of government offices. Existing political institutions were able to cope with the change and take those few, but important, actions necessary to mitigate growth problems.

In terms of economic diversification, the mining and construction sectors expanded, but the number of businesses increased only slightly during the impact period. The business community did not experience major structural changes. Rather, existing establishments became more viable, and some were able to modernize.

The two existing banks modernized somewhat, and banking procedures became more formalized. When a local bank was sold to Zion First National, centered in Salt Lake City, decisions became not only more formalized, but control also shifted outside of the local area.

Greater mobility and higher incomes resulted in some lifestyle changes. These were tempered by the social, cultural, and religious role of the church which was a strong intergenerational unifying element in the community.. In addition, intermarriage among local residents heightened informal social ties. Because of homogeneity in religious practices, long-term familial ties, and the lack of significant "outsider" in-migration, social activities changed very little.

B. Outside Linkages

Salina increased its reliance on planning and social services functions provided by the county, especially in the educational area. The securing of grants during the impact period has necessitated greater communication with state and federal agencies. Yet, this increase in political linkages was not significant because Salina residents place great importance on self reliance and independence of political activity.

In the economic area, the major change was a shift from local control of the coal mines to extra-local control. This shift, however, was viewed as positive by all respondents. The former local owners did not have the necessary resources to expand the industry, and while the mines are controlled by outsiders, the managers of the mines informed local officials of their plans and actively participated in community events. Senior company managers and engineers who relocated to Salina were accepted well by the community. Extra-local linkages have also increased in the area of finance with increased banking control outside the local area.

C. Distribution of Resources and Power

Important social groups identified in Salina were:

The Merchants. A large majority of the owners and managers of retail and wholesale firms in the city were Mormon, resided in the city, and had long-standing familial history in the area.

The Agriculturalists. Many of these descendants of early settlers of the area ran small farm/ranch operations on a marginal basis. Many owners were becoming increasingly dependent upon wage and salary employment. Members of this group have traditionally been among the community's leaders.

The Miners. The miners were not heterogeneous as a social group, but were mostly young, usually Mormon, and have familial links to the local area. They were not very active in community affairs, yet as a group they have enormous purchasing power.

Transients. In-migrants who were not employed in the mines were identified by local residents as a separate social group. Often, these individuals resided in Salina on a temporary basis. The chief transient group was oil exploration crews, and many of the social problems (crime) were attributed to them.

Elected officials were usually long-term residents of the community and represented various socioeconomic levels of the local society. There have been no apparent changes in political stratification during the impact period. Much political influence and expertise was exerted by non-elected officials such as church bishops, bankers, and school administrators. As growth-related problems surfaced, there was a tendency for greater involvement and actions by non-governmental officials and organizations. Bankers have played increasingly important roles in the local governments' financing arrangements and grant applications. The church assumed responsibility for social issues such as drug abuse and crime and has organized special parent-school-pupil meetings to address these issues.

The political process was especially open in Salina and public meetings over important issues were characterized by high levels of participation. The former mayor of Salina was a female, and females had historically played a strong role in local politics. Energy-related growth did not affect either the role of women in politics or increase the role of newcomers or non-Mormons.

The major change in the economic stratification system in Salina was the differential in income between the generally younger mine workers or truck drivers and other non-agricultural workers. There was some resentment expressed by elderly residents that the young coal miners with comparatively large incomes did not contribute positively to the community either monetarily or in government/community services.

Energy-related growth did result in additional work opportunities for women in mining-related administrative positions or in other sectors where employment opportunities expanded. An increase in female employment was evident during the impact period.

Social variation along socioeconomic lines was not large. Although young miners received high incomes, they generally did not upgrade their status as community members. Status and standing in the community was and is strongly related to community and church involvement.

VI. Changes in Social Well-being

A. Access to Resources

Improvements in public services (water, schools, law enforcement) benefited everyone including the elderly. Incomes increased for the working-age population, and private goods and services were expanded and improved. And, although the tax burden increased for the elderly, the presence and dominance of the Mormon Church ensured that none of the elderly were left destitute.

B. Behavior Changes

Most residents felt that crime had increased but believed any increases were caused by the oil exploration crews and the presence of the new interstate highway. Increases in crime were not large in any category, and crime was not perceived as a serious problem by anyone interviewed.

Significant increases in mental health problems were generally not noted, although residents suspected that the tenants in the low-income housing units would require mental health services. There was also no evidence of any increased family disruption.

Alcohol abuse was noted as a long-standing community problem. However, the incidence of alcohol abuse was not considered to have been greatly affected by the mining activities. Increases were attributed to oil workers and transients brought in to work on the new highway.

Concern was expressed regarding child care practices among the residents of the low-income housing unit, but no data were available to document any changes. In general, the strong Mormon emphasis on family life was thought to have minimized child neglect and abuse problems among the general population.

IV. Summary of Major Findings: Salina, Sevier County, Utah

One: The mine owners apparently made conscious decisions to expand gradually and to place strong emphasis on living locally. These two factors greatly reduced any growth problems.

Two: Like most municipalities in the West, the city had inadequate financial resources. If the changes had been larger, financing new services would have been a major problem.

Three: There were apparently no major social problems associated with the growth in Salina and Sevier County. However, average annual growth was less than three percent per year in Salina and less than 4.5 percent annually in Sevier County over the decade. Further, the growth was spread rather evenly over a ten-year period.

Case No. 5: Grants, Cibola County, New Mexico

I. The Community Prior to Development

Grants is located along Interstate 40 in west central New Mexico in Cibola County (previously western Valencia County) on semi-arid prairie between mountains and desert. Seven Indian reservations lie partially or wholly within Cibola County (Acoma, Isleta, Laguna, Zuni, Romah, Canoncito, and Navajo), as do several Spanish land grants. Grants is approximately 60 miles east of Gallup (the capitol of the Navajo nation) and 78 miles west of Albuquerque, the primary urban, trade, and transportation center of the region.

The area was initially settled by prehistoric Indians who established a complex agricultural and communication system; they were followed by nomadic Navajos and Apaches. The first Europeans to enter the area were Spanish explorers and missionaries who settled throughout the region. The first substantial influx of Anglo-Americans occurred following the Civil War. The principal activities of the newcomer Anglos were ranching, railroad work, and mining.

Grants has had a colorful and varied history. Notable events affecting the city include the following:

- completion of Atlantic and Pacific Railroad in the 1880's;
- Bluewater Irrigation Dam and Reservoir constructed in 1927;
- city incorporation in 1946;
- discovery and development of uranium in the 1950's;
- construction of I-40 in 1975; and
- establishment of a new county (of which Grants was the county seat) in 1981.

Grants itself was established as a railroad town in the 1880's and served as a shipping point for local cattle and sheep until the 1940's. The economy was based primarily on livestock. Lumbering began on a small scale west of Grants in the 1890's and became an important industry until after World War II.

The area developed into a major truck gardening center during the late 1930's. This industry continued until the mid 1950's when new packaging, expensive freight costs, competitive commercial farms, and competition with uranium mining for water and labor caused its decline. Throughout this period, Grants served as a retail trade and service center for the local area and for tourists.

Mineral exploration and development began in the Grants area in the 1930's with the mining and milling of pumice near Mt. Taylor. A crushing plant was built in Grants in 1938. (The major parties involved were Proctor & Gamble, the U.S. Gypsum Company, and the U.S. Navy.) In 1950, uranium was discovered about ten miles west of Grants, and in 1951, the Anaconda Company discovered a huge deposit on the Laguna Indian Reservation. By 1955, a number of major companies were active in the area including Anaconda, Kerman, Nuclear Fuels, Phillips Petroleum, Homestock, and Climax. The boom of the 1950's was followed by a bust, a cycle that was repeated in the 1960's.

Historically, Grants has been affected by its position as the second city in a large county and by its relative proximity to Albuquerque which inhibited diversification and growth.

The Grants area was mixed culturally, with two very distinct groups of land-based residents: the Native American population and the residents of the Spanish land grants. Additional culturally distinct groups, such as the Mormons (who resided primarily in the settlement several miles outside of Grants), the French-Canadians, and the Hispanics (divided into Spanish and Mexican origin), contributed to the traditional social diversity of the area. In Grants itself, the population was concentrated primarily into two groups: Anglos and Hispanics, with few Native Americans or members of Spanish land grant families residing in the town.

The area has experienced many large fluctuations in population. In 1960, the population of Grants was 10,274 and growing, but by 1970 it had fallen to 8,768. During this same period, the population of Valencia County (of which Grants was then a part) rose slightly from 39,085 to 40,539. The population of Grants rose to over 14,500 in 1978-79 before declining to 11,500 in 1980.

Because of its diverse economic base (ranching, lumbering, agriculture, mining) and its diverse social composition, the political structure of the community (and county) was complex. Until 1981, Grants was part of Valencia County and was approximately a two-hour drive from the county seat. This reportedly isolated Grants residents from county-based activities. Nevertheless, Grants had historically been well-represented and active in state government. Two of the most senior members of the state senate and the state legislature were Grants residents.

Since little of the basic economic activity was located within the city limits, the tax base of the community was limited, and services were traditionally adequate but minimal. Because of the presence of Native Americans and the Spanish land grants, as well as large portions of federally owned land, the community and its leaders had long been exposed to the formal organizations and regulations of the state and federal governments. A number of programs directed at special populations were located in Grants.

By the beginning of the study period, there was strong, active support within the community for continued growth. Because of the extensiveness of uranium and coal deposits in the area and their importance to the community's future, Grants tended to define itself in terms of energy development, organizing campaigns touting the community as the uranium capital of the world.

II. Description of Energy Projects and Summary of Project Inputs

A. Projects

From the 1950's, when uranium was first discovered in the Grants area, to the 1970's, when the most recent major expansion of mining and milling occurred, there had been an increasing trend toward ownership by very large multinational corporations. As it occurred, this shift from small operators to large corporations was generally viewed as beneficial by local residents because they assumed (incorrectly, as it turned out) it would increase the industry's ability to smooth out the peaks and valleys in employment.

Grants was affected by development activity in both McKinley and Valencia counties. By 1970, of the three types of energy development in the area (uranium, coal, and natural gas), the largest and most immediate effects were caused by uranium mining and milling.

Mining and milling operations by Sohio, Anaconda (ARCO), Gulf, United Nuclear, James Hamilton, and Mining Unlimited, Inc. were located in the vicinity of Grants during the 1970's. By 1979, employment in uranium mining and milling activities in the area had risen to approximately 3,000 workers. Although the nearest operating coal mines were located closer to Gallup, in 1979 coal mining employment in the area was estimated to be about 550. The resurgence of uranium-based employment started in the early 1970's and escalated during 1977-79 before it declined abruptly. In 1980, almost all operations cut back on their activities and a number shut down completely. No definitive information is available on employment in natural gas exploration.

Most of the development took place more than five miles outside of Grants. None of the projects were visible from the town.

B. Direct Project Mitigation Activities by Project Developers

Although none of the energy projects affecting Grants involved construction of a major fixed site facility that required a large (over 1,000 persons) temporary work force, the simultaneous development of numerous projects did create a housing shortage. When a similar problem developed during the 1950's, one of the energy developers constructed a subdivision of "miners" housing in Grants. Access to this housing was limited to company employees, a policy which created problems and was generally believed to have made employees' integration into the community difficult. During the 1970's, several companies developed worker housing near their project sites. In addition, the companies were characterized as having taken a generally "helpful" attitude toward the community, participating in community fund raising events and assisting (by providing equipment and personnel) during community emergencies like the threatened flood. For projects located on reservations or land grants, agreements were usually established to ensure the training and employment of reservation or land grant residents. This resulted in a substantial expansion of employment and income opportunities for these groups.

Aside from these activities, no coordinated or intensive company-sponsored mitigation efforts were made. In general, community residents considered this to be normal and acceptable.

III. Phases of Development

A. Resurgence of Uranium Development: 1971-1975

During this phase, the downward trend in uranium activity was reversed, and workers and their families started migrating into Grants. Residents' confidence in the permanence and magnitude of the growth rose as large corporations entered the local economy and the national emphasis on nuclear power seemed to ensure a long-time market for uranium.

B. Rapid Growth Period: 1976-1979

By 1976, the expansion of uranium mining and milling activities was in full swing. New mines were opening, and existing operations were expanding. The population influx increased; housing continued to be difficult to obtain, although new construction was proceeding rapidly. The growth phase was forecast to continue well into the 1980's.

C. Faltering Growth and Bust: 1980-1981

In 1980, the bottom fell out of the uranium market, and mines and mills started decreasing their work forces and shutting down operations. This resulted in major unemployment in Grants as well as nearby land grants and reservations. Because this abrupt decline was unexpected, the level of uncertainty during 1980 and 1981 was very high; personal, corporate, and municipal planning was seriously disrupted. Because uranium mining throughout the nation was similarly affected, thus reducing employment opportunities elsewhere, workers did not immediately leave the Grants area (although it was reported that many miners left the area searching for work while their families remained in the Grants area).

IV. Changes in Community Resources

A. Public Facilities and Services

Because much of the mining activity occurred outside of Valencia (later Cibola) County, the revenue from development was largely limited to sales tax receipts, as property values did not increase substantially. (Operations on reservations and land grants often had specific royalty agreements that generated substantial revenue for these governmental units.) As a result, Grants, traditionally operating on a limited budget and obtaining only moderate support from the county, was increasingly hard-pressed to provide the additional services required by the expanding population. During the latter portion of the 1970's, the community applied for and received funds from the state's Community Assistance Program. These monies were used primarily to upgrade water and sewer facilities and roads.

In New Mexico, school operating budgets are provided primarily through state funds, although local areas are responsible for capital facilities. Throughout the study period, a nubmer of temporary classrooms were utilized by the Grants school system.

B. Housing

Housing was a problem throughout the study period, despite the efforts of the energy companies to construct housing subdivisions proximate to the work sites. As during the previous boom period, the increased demand for housing was met by expansion in the number of mobile homes and mobile home parks. Although Grants had enacted zoning regulations well before the study period, these regulations were reported to have been only loosely enforced. Public pressure for more stringent enforcement increased during the latter part of the 1970's which, combined with street improvements (financed in part of state impact assistance funds), resulted in improved conditions in many of the mobile home areas.

Local developers and entrepreneurs were actively involved in the real estate market, which was growing rapidly. Forecasts of long-term energy development indicated continued growth into the 1980's. Local investors, as well as homeowners, suffered financial loss as the boom turned to bust and the market for housing disappeared during a period when national interest rates remained high.

C. Private Investments

Because the growth of the 1970's was forecast to be large and long-term, there was considerable incentive for business expansion to occur. There is no question that the increased population and income generated by energy development resulted in the expansion and diversification of business activities. Interviews with long-time business operators in Grants indicated that increased activity more than compensated for the increased competition. Because many "local" businesses were on premises that had been paid for and often used family labor (supplemented during peak periods by hired personnel), long-time businesses were substantially less vulnerable to slowdowns than newcomers' businesses. Those most seriously hurt were entrepreneurs who had borrowed heavily to capitalize on the expected growth in the early 1980's.

D. New Economic Climate

Grants was well-experienced with the boom-bust cycle. Consequently, despite the forecasts for continued growth through the mid-1980's, many long-time residents were not entirely surprised by the rapid downturn, although its timing was unexpected. Many aspects of community life had adapted to growth and had a substantial stake in the continuation of energy activity. Residents of Grants expressed dismay over the lack of a national energy policy that would address such problems. At the time of the study, local influentials were attempting to organize a region-wide delegation to travel to Washington, D.C. to promote a more coherent national energy policy.

V. Changes in Social Organization

A. Diversity/Complexity

Although the energy growth that occurred during the 1970's resulted in a noticeable increase in the number and diversity of economic activities in the community, the relatively short duration of the growth period kept these changes from being as marked or permanent as they otherwise might have been. Because of its previous experience with energy activity and its historical economic diversity, these changes were not considered particularly significant to the long-term characteristics of the community.

During the study period, Grants experienced substantial growth in population. However, because of its diverse ethnic background and its previous integration of miners (from the southeastern United States and French-Canada), the new population caused only a moderate increase in social diversity or complexity.

Little change was seen in the political structure of the town, although increased requirements for planning, grant application, administration and financial control resulted in development of more specialized, professional governmental positions. The leadership structure, already highly complex and diverse, was not significantly altered. Because of the multi-cultural nature of the population, formal mechanisms and procedures to ensure equitable treatment and reduce misunderstandings had largely been developed prior to the study period. However, the increased population caused by energy development and the heightened political visibility of the Grants area were instrumental in prompting the establishment of Cibola County, with Grants as the county seat. Of all of the changes caused by energy development, this may turn out to have the greatest long-term effect on the community.

B. Outside Linkages

The pattern of linkages to outside organizations remained uneven throughout the study period. Grants maintained excellent contacts at the state level (a very senior senator and legislator were Grants residents). These contacts were instrumental in:

1) Raising the salience of the problems facing rapid growth communities in the state government;
2) The formation of the Community Assistance Program, from which Grants received substantial monetary aid; and

3) The formation of Cibola County with Grants as the county seat.

The linkage between Grants and the county government had traditionally been somewhat distant and antagonistic. The formation of the new county was expected to result in increased political linkages and to heighten local autonomy.

Grants was also reported to have had only limited ties with the regional Council of Governments (COG). Since this organization served as an intermediary for many governmental programs, the lack of an effective linkage between Grants and the COG inhibited its access to programs and resources. This did not change over the study period.

From the initial development period in the 1950's, there was a consistent trend for energy development to be undertaken by ever larger corporations. By the 1970's, the array of multi-national firms operating in the Grants area was much greater than for most communities of its size. However, because of the common resource-based nature of the growth, these linkages did not result in substantial diversification, and only temporarily served to draw resources into the community. When uranium mining became unprofitable, the large corporations proved no more able to counteract national forces than the earlier small companies had been, and many of the national firms withdrew from activity in the Grants area quite precipitously, leaving few long-term changes in economic linkages. However, the presence of large corporations did raise local consciousness for national issues and served to reduce the isolation of the community.

C. Distribution of Resources and Power

Because of its previous experience with similar types and magnitudes of growth, the energy development of the 1970's resulted in a temporary stabilization of the changes in wealth and influence that had been evolving since the 1950's. Since the existing system was complex and had already incorporated the people and activities associated with energy development during previous growth periods, the changes occurring during the 1970's were limited. Long-term residence and participation in the local political process remained a prerequisite for political influence. Leadership continued to be shared between Anglos and Hispanics, and the relative economic and social standing of the various cultural groups did not appear to have been significantly affected by energy growth activities (although they temporarily altered the access of Native Americans and land grant residents to high paying jobs and royalties).

D. Coordination and Cooperation

Overall, Grants exhibited a relatively high degree of coordination and cooperation, given the potential for dissent created by its multi-cultural composition. The established political procedures had developed leaders who were accustomed to dealing with conflicts, to developing a long-term perspective, and to negotiating compromises. This pattern persisted throughout the study period, with the result that no clear community or group positions were taken relative to energy development, and major conflicts were generally avoided.

Although generally accompanied by lively debate, community leaders appear to have acted from an overall basis of cooperation. The major community conflict identified during the study period involved the administration of the police department and centered around a racial issue. Nevertheless, despite the emergence of this highly volatile issue, community leaders managed to hold the community together and contain the issue within established political bounds.

Little change was observed in community cooperation and coordination as a result of energy development and growth. The greatest stresses may have occurred during the bust period, when resources and opportunities were being reduced rather than expanded.

VI. Social Well-Being In Grants

Interpretation of county-wide data pertaining to well-being is difficult for Grants because of the presence of other major population centers, notably Los Lunas and Belen (which had 1980 populations of 19,131 and 11,582 respectively). Interpretation of the data is further complicated by the presence of large populations of Native Americans and land grant residents who exhibit distinctive economic, demographic, and behavior characteristics.

A. Access to Resources

Per capita income in Valencia County remained below both state and national levels throughout the study period. In 1970, per capita income in the county was 75.7 percent of the state level and 59.2 percent of the national level. By 1979, the county's per capita income had risen to 90.4 percent of the state and 77.7 percent of the national level. This was at least partially due to the expansion of energy-related employment opportunities for Native Americans and land grant residents and the overall increase in the proportion of high paying mining employment in the county's economy.

Access to housing for newcomers was limited; 39.7 percent of the respondents (living in the least permanent housing) had required more than one month to find their housing.

During the 1970-79 period, investment capital, tax revenue (particularly sales tax revenue), and job opportunities increased dramatically in western Valencia County. The selection of goods and services expanded as did the overall purchasing power of community residents. Some improvements were made in public facilities, especially roads, although generally residents reported that service levels remained only adequate.

At the beginning of the study period, Grants had a diversified public service sector, providing support services to community and area residents. Little change in the availability of such services was noted over the decade of the study period.

B. Behavior Changes

Overall, community residents noted little change in personal relationships and public behaviors during the study period, largely because of the previous experience with development and the presence of a population with similar occupational and cultural characteristics over the last several decades.

Uranium mining was generally characterized as a high-stress, physical occupation. Work-site restrictions on behaviors during mining work periods were thought to increase the incidence of heavy drinking (and drunken driving) and family problems among underground miners. A high proportion of Grants residents were working shifts (43.8 percent of the workers interviewed), which was believed to contribute to worker and family stress and to affect community participation.

Law enforcement personnel noted that the prevalence of "gang" conflict decreased between 1970 and 1980, resulting in a general improvement in the community's sense of public safety over this period. Throughout the rapid growth period, problems with drunken driving, fighting, bad check writing, and burglary were noted, but were not attributed to any particular groups. An increase in personal conflicts and theft was noted during the bust period. However, excessive drinking and drug abuse (and trafficking) had been long-term social problems that continued through the study period.

Child neglect and abuse were generally perceived to have increased over the study period, as were conflicts between spouses. Mental health workers felt that these adverse effects were most extreme for those Native Americans and land grant residents who were experiencing a conflict between traditional and current lifestyles.

C. Perceptions of Community Well-Being

Residents of Grants, newcomers and long-time residents alike, considered the boom-bust cycles detrimental to community and personal well-being, but most also viewed them with resignation as an inherent characteristic of the area's economy. Prevailing through a bust cycle was considered a sign of "survivorship" that had a positive connotation and appears to have been incorporated in the definition of community residents. The comradeship generated by overcoming adversity was generally described as contributing to community cohesion.

The relationship among different cultural groups in Grants was already complex at the beginning of the study period, and little change due to energy development was noted. Many residents valued this multi-cultural aspect and considered it one of the benefits of life in Grants.

Compared to other energy impacted communities, such as Wheatland and Douglas, Wyoming, or Colstrip, Montana, Grants did not emanate an aura of prosperity in the public sector even during the later part of the high employment/activity period (1978-1979).

Despite the fact that Grants was exposed to few situations over the study period that were entirely new, there is no question that large-scale energy development was highly salient to community members. Residents tended to define the community in terms of energy development ("the Uranium Capital of the World"). The disruptions and sense of chaos created by the rapid influx of population, the economic importance of the energy companies and the miners, and the persistent overtone of uncertainty about future conditions were important parameters to perceptions of life in Grants.

VII. Summary of Major Findings: Grants, Cibola County, New Mexico

One: Grants' response to and evaluation of the rapid growth caused by energy development during the 1970's was strongly tempered by its experience with two previous boom-bust cycles.

Two: The community's access to state government was greatly enhanced by the presence of two senior and powerful local political representatives. This not only resulted in an increased flow of resources to the community, but was also instrumental in the formation of a new county (of which Grants was designated the county seat), a change that was viewed as substantially increasing local political control and representation in state politics. It also resulted in the passage of legislation that increased state aid to energy-impacted communities throughout New Mexico. The initiative for these changes came primarily from the political representatives, not from the community.

Three: Because the community was already socially diverse and had experienced sufficient growth so that the basis for interaction among residents was no longer informal and personal, most residents considered the important changes resulting from the energy development activity of the 1970's to have been in amenities (housing, availability of services), in economic status, or in occupational characteristics rather than in the nature of the community's social organization.

Case No. 6: Washburn, McLean County, North Dakota

I. The Community Prior to Development

McLean County was created by the North Dakota Territorial Legislature on November 1, 1883, and is located between present-day Minot and Bismarck in the west central part of the state. The three largest county population centers - Garrison, Underwood, and Washburn (the county seat) - are each approximately 40 to 50 miles from either of the state's two commercial centers, Bismarck and Minot.

The Lewis and Clark expedition was the first American party to cross the state, traveling up the Missouri River by keelboat in 1804. The Missouri acted as an artery for commerce, transportation, and communication, beginning with the Indians and early fur traders. As the advent of the steamboat linked Bismarck with McLean County, the rich farmland attracted many settlers. The coming of the railroad further opened the area and contributed to the "Great Dakota Boom" from 1878 to 1890.

The major actors in the continuing history of McLean County have been a relatively dependable agricultural sector, development of water resources, the growth of a nearby military installation, and the utilization of the area's lignite reserves.

Early agricultural and commercial growth brought McLean County's population to 17,991 in 1930. Subsequent crop failures and dust storms bankrupted many area farmers and caused a notable population decline from 1930 to 1940. Between 1940 and 1950, the construction of the Garrison Dam brought the population back up to 18,824 in 1950. The population declined steadily from the 1950's to the early 1970's, primarily as a result of the national trend toward consolidation of agricultural operations to achieve higher productivity. In the early 1970's, the population decline was reversed by increased development and processing of the area's coal reserves.

Those agricultural settlers who survived cyclical reversals were largely of Norwegian, Canadian, German, and German-Russian ancestry. These ethnic roots have persisted in McLean County with many of the recent construction-related arrivals consisting of present or former residents or children of former residents.

The primary occupations in McLean County in 1970 were farm proprietors (23 percent of those employed), government (17 percent), and construction (14 percent). Trades, service, and non-farm proprietors each accounted for about 12 percent of those employed. Major organizations were agricultural organizations, the chamber of commerce, some civic clubs, and local churches.

In 1970 McLean County residents exhibited great homogeneity of lifestyle. While the general income level of McLean County was lower than that of the state, there did not appear to be striking inequities of wealth. Patterns of dress, consumption, and recreation among the residents also tended to be similar.

McLean County's resource base was generally restricted. County revenue was derived mainly from agricultural enterprises and from the development of local coal reserves. The county's commercial sector still reflects the dominance of agricultural interests even in the face of recent energy development. The limited nature of McLean County's resource base does not lend itself to the hoped-for attraction of industrial growth.

Leadership in both the county and municipalities reflected the dominance of agricultural interests dependent upon agricultural enterprises. Local elected officials were, for the most part, either directly engaged in agricultural pursuits or were proprietors of businesses related to agriculture. The general agricultural orientation of county and community leadership seems to engender considerable interest in preserving the character and integrity of the local community as well as a generally conservative approach to growth management. Good cooperation existed between county, municipal, and school district leaders.

Local residents exhibit strong attachments to McLean County as evidenced by the number of families remaining in the area for many years. Also, many of those who had moved away in past years returned with the boom of recent construction and energy-related employment.

The majority of residents looked forward to development as a potentially positive experience.

II. Description of Energy Projects and Summary of Project Inputs

A. Project Description

The only new energy project within McLean County from 1970 to the present was the Coal Creek Station. The 1,000 megawatt complex, along with the mine supplying its coal, is located midway between Washburn and Underwood. This site was selected because of the immediate availability of both lignite coal and water.

While the United Power Association and Cooperation Power Association decided to start construction of the Coal Creek Station in the fall of 1974, unexpected delays in the permitting process and inclement weather delayed the start of construction until May of 1975. Once construction had begun, further delays resulted from late deliveries of critical materials.

The total Coal Creek Station work force at the beginning of construction was approximately 266 and increased to a peak of 2,398 in 1978. The current operational work force for both the power plant and the mine is about 530 employees.

In an attempt to minimize delays in the scheduled construction of the plant, two ten-hour shifts were implemented. As a consequence, actual employment significantly exceeded employment projections made early in the project.

According to a 1976 construction worker survey, 61.4 percent of the work force were local workers (a local worker was defined as one who lived at his present address prior to the start of construction in May, 1975), and 38.6 percent were non-local. Approximately one-third of the work force lived within McLean County while the remaining two-thirds commuted from outside the county.

B. Direct Project Mitigation by Project Developers

McLean County mitigation needs have been met largely through federal and state assistance in the form of loans or grants. To date, there have been no mitigation funds provided by development companies.

However, the Falkirk Mining Company has agreed to mitigate disruption to the city of Underwood's water supply caused by the expansion of mining activities. The agreement proposes the construction of a well and a pipeline to the present storage facilities at Underwood.

III. Phases of Development

A. Early Phase - Preparation and Planning: 1973-1976

This initial time period was characterized by reaction to the proposed project in terms of discussion, but was accompanied by very little planning for growth. The lack of concerted action during this phase stems from local fiscal concern that was fueled by confusion primarily over the numerous conflicting population projections. During this initial phase, the management of the Coal Creek Station did not exhibit great interest in accepting responsibility for local impact or in responding to local needs until the local government forced the issue through the use of various local and state zoning/permitting regulations.

B. Middle Phase - The Peak Years: 1977-1979

The total work force increased from 650 in 1966, to a peak of 2,398 in 1978. While the total work force level is impressive, it must be remembered that only about 35 percent of the construction work force was residing within McLean County. Because population impacts on McLean County did not reach the magnitude predicted, the accommodation process was relatively orderly and did not generally require significant expansion of public service infrastructure. The three areas requiring expansion were public schools, housing, and law enforcement. Because of local leaders' fiscal concern and previous boom-bust economic cycles in the area, care was taken to avoid overexpanding the local infrastructure.

C. The Leveling Phase: 1980-1982

This third phase has seen a general cessation of construction on the Coal Creek Station and the stabilization of the operational work force of the power plant and mine. With a general decline in commercial activity, local leaders are looking forward to similar construction projects in the surrounding area or the arrival of additional industry to bolster a sagging economy.

IV. Changes in Community Resources

A. Mitigation Activities

No specific organizations or groups were formed in McLean County in an attempt to deal with problems associated with the construction of the Coal Creek Station. Washburn and Underwood did hire planners and expanded their auditors' positions in response to impact-related issues. Most of the impetus for impact planning/mitigation came from the McLean County Commissioners. As noted previously, officials of the Coal Creek Station were very reluctant to participate in the growth management process.

B. Private Investment

While impact in McLean County was sufficient to support expansion of the trade and service sectors, it seemed to be a point of pride that local businessmen did not take undue advantage of consumers as was reportedly the case in neighboring counties. A number of new establishments opened in response to increased commercial opportunities: a pizza parlor, a new motel, a racquetball court, a hardware store, a savings and loan association, a lumber yard, a chemical company, an auto body shop, and a radiator shop. Also, a new dentist and an opthamologist were attracted to the area.

C. Citizen Responses

During 1976 and 1977, household surveys were conducted in McLean County in part to assess local residents' attitudes towards growth. McLean County residents expressed a positive attitude about the expected economic benefits associated with development. Their level of agreement increased between 1976 and 1977, indicating that experience with development increased their level of belief in the economic benefits to be derived. At least 75 percent of the people in

McLean County, in both 1976 and 1977, said they would welcome a moderate level of growth.

However, it also appears that people believed that changes in the quality of community life resulting from construction of the power plant would basically be negative. Thus, residents tended to favor choices that restricted development in favor of environmental protection.

D. Housing

McLean County communities experiencing most of the housing growth from the Coal Creek Station were Washburn, Underwood, and Wilton. The majority of available housing units and mobile home spaces were filled during the first three years of the plant's construction. Once the available housing was filled in these three communities, the balance of new residents settled outside of McLean County in the larger urban areas of Minot and Bismarck/Mandan. During 1977, new housing and mobile home spaces were provided, particularly in Underwood and Washburn, allowing a higher percentage of construction workers to locate in these communities.

E. Merchants and Workers

As was mentioned earlier, local merchants prided themselves on not charging exorbitant prices for goods, services, and accommodations like the merchants in other counties. Some local businessmen did acknowledge that they preferred local agricultural customers to construction workers because the latter required more services but spent less of their money locally. The workers seemed to harbor little, if any, ill will towards local merchants and businessmen. However, many construction workers' families did their major shopping outside the county primarily because of lower prices in regional trade centers such as Bismarck and Minot.

F. Service Demands and Agency Changes

During the period of rapid growth, demands for some services increased. Increases were evident in the provision of police services, education, and water/sewer services. To date, most of the funding for service expansion has come from state and federal sources in the form of loans or grants. The Farm Home Loan Board and the State Coal Impact Office have been particularly fruitful funding sources for McLean County.

The need for law enforcement services expanded dramatically during the construction period. The McLean County Sheriff's office has seen the largest expansion including additional staff, patrol cars, and a jail addition. Since the sheriff's office not only provides services to county areas, but also provides contract services to a number of smaller towns and the Coal Creek Station, large increases in the cost of law enforcement are generally due to the population change realized from the power plant development.

Population increases have also meant an increase in school-age children in the county. While most schools in the area had sufficient excess capacity to absorb additional students, the Underwood school district required an addition as did the Washburn district.

Water and sewer systems were substandard in both Washburn and Underwood prior to the construction of the Coal Creek Station. With the resultant population increases, the water and sewer systems in Underwood and Washburn not only had to be upgraded but also expanded.

G. The New Economic Climate

While construction of the Coal Creek Station provided a temporary boom to the McLean County economy, the operational work force has not been sufficient to sustain the level of economic activity expected during the peak construction period. Local economic conditions have cooled off, as exhibited by the closing of some of the commercial establishments that opened in response to increased commercial activity. Consequently, local business and political leaders are exploring various means to encourage future economic growth and, hence, community stability.

V. Changes in Social Organization

A. Diversity/Complexity

The construction and operation of the Coal Creek Station seemed to contribute to a marginal increase in the diversity of social organization in McLean County communities. While communities did experience some population growth resulting in a more heterogeneous age structure, many in-migrants were former residents with similar values, lifestyles, cultural and geographic backgrounds. A few new postions were created in town and county governments, but there was little evidence of other changes in leadership roles. The predevelopment power structure remained largely intact as did the majority of norms governing behavior in public and private affairs.

B. Outside Linkages

Energy development did not contribute substantially to an increase in external linkages in McLean County. There were very few federal agencies involved in local affairs by virtue of limited governmental holdings, and no increase had been noted during the development phase. The preponderant share of new commercial ventures in the county were locally owned an operated. While the Coal Creek Station does play a part in the local economy, its role is clearly secondary to dominant agricultural interests. Because many in-migrants were actually returning to an area they lived in previously, internal linkages were somewhat diminished. The development experience did, however, reinforce linkages with agencies which provided growth management resources such as the state's Coal Impact Office and the Farm Home Loan Board.

C. Distribution of Resources and Power

The stratification system of McLean County does not seem to have been appreciably altered as a result of recent energy-related development. While changes in the economic base have added some different occupations to the class structure, most of the in-migrants are laborers. The historical dominance of agricultural and commercial interests in the class structure, status hierarchies and distribution of power remains largely unchallenged. The establishment of higher relative sectors in the local economy has created a condition of relative inequality for residents on fixed incomes and those who are bound to sectors in the local economy that do not readily translate increased profits from energy growth into wage increases.

D. Coordination/Cooperation

The relative stability of the above dimensions of community organization (differentiation, stratification, extra-local linkages) in McLean County seemed to support the continuation of relatively well integrated communities throughout the development period. Residents of the area welcomed the prospect of a power plant close by and made concerted efforts through local civic organizations and churches to integrate newcomers who showed any interest in the community. Again, the process of integration was facilitated because many in-migrants were returning to the area and were, therefore, already acculturated to some degree.

VI. Changes in Social Well-Being

A. Access to Resources

During the construction and operational phases of the Coal Creek Station, per capita income increased rapidly in McLean County ($5,725 in 1974; $7,921 in 1979) and remained at a higher level than North Dakota as a whole ($5,883 in 1974; $7,683 in 1979). Some additional jobs with relatively high wages became available. However, the construction and operation of the power plant has not generally resulted in a more diversified economy or in a more diversified export base which should lead to greater long-term stability.

Services are now at levels similar to those existing before development. While some new retail services have come into being, others have disappeared following the completion of construction. Local government services have also generally remained the same with the exception of schools, police protection, culinary water, and wastewater, all of which have been improved. Health care services were slightly augmented with the addition of two practitioners, but human service agencies/programs have remained largely unchanged.

B. Behavior Changes

The county sheriff believed that the incidence of some crimes had increased but that actual rates had probably declined (i.e., traffic-related and alcohol-related crimes and family disturbances). The sheriff attributed much of this decrease in rates to preventive law enforcement measures instituted in the county.

A review of FBI data for the years 1971 to 1980, shows that almost all crimes for those years are against property (burglary, larceny, motor vehicle theft) as opposed to crimes against persons (homicide, rape, robbery). The average rates for all crimes against property were higher during the construction and operation period (1975 - 1980) than for the preceding four years.

Mental health admission data for McLean County during the construction period indicates that there was no evidence of any serious increase in mental health problems. The suicide rate for McLean County has generally remained low throughout the construction and operation phase.

Alcohol abuse was ranked by residents as the fifth most serious problem anticipated as a result of energy development. Arrest reports from the county sheriff's office indicate a large number of alcohol-related offenses during the construction period, and mental health admissions also indicate a substantial number of alcohol-related admissions during that same period. Data for the post-construction phase indicates the incidence of alcohol-related problems has declined significantly.

Crude divorce rates for the construction and post-construction phases of the Coal Creek Station indicate an increase in the rate of divorces in McLean County. Throughout the period, however, divorce rates in the county have remained noticeably below the steadily increasing rates for the state as a whole. Since divorce rates seem to reflect underlying instabilities in social systems, the relatively low rates in McLean County are indicative of the low level of social disruption which accompanied development.

C. Perceptions of Community Well-Being

The construction and operation of the Coal Creek Station has not significantly altered social cohesion in the area's communities. The area's social fabric has remained essentially intact with little or no disruption during even the peak construction phase. Social/cultural diversity in area communities has not varied substantially from pre-development times. Local communities have maintained the autonomy they have historically enjoyed.

VII. Summary of Major Findings: Washburn, McLean County, North Dakota

One: Dialogue between representatives of the developing industry and local officials was initiated only after political leverage was applied by local leaders. Industry seemed rather reluctant to accept a role of responsibility in the growth management process.

Two: Even though impacts on local communities were not severe, jurisdictions received no support from industry in expanding those few areas of public infrastructure where shortfalls did exist. The growth management process would probably have been improved by the more active participation of industrial developers, specifically by a willingness to accept financial responsibility for project-related impacts in anticipation of projected growth.

Three: Work force impacts of the construction and operation of the power plant were moderated by the following conditions: a significant number of local residents entered the work force; many of the construction workers employed at the Coal Creek Station commuted from permanent residences outside of McLean County; many of those workers who migrated into McLean County were either former residents or residents of the area and, hence, familiar with the communities and the climate; and the nature of the development did not require a large permanent work force.

Four: The impact of construction and operation did not significantly alter the social organization or economic base of local communities.

Five: In the most general sense, energy development caused no serious harm to the local area, but also did not provide the economic stimulus that was expected over the long-term. A majority of local citizens would probably vote to accept another such development.

Case No. 7: Douglas, Converse County, Wyoming

I. The Community Prior to Development

Douglas is located on the North Platte River in the southeastern quarter of Converse County. The county itself is in the east central portion of Wyoming, within the major energy resource belt of Wyoming. Located on rolling, semi-arid prairie, with foothills and mountains to the southwest, Douglas is 27 miles east of Glenrock, the other major residential center in Converse County, and about 50 miles east of Casper, the county seat of Natrona County and a major regional center.

The first white settlement in the Douglas area occurred in the 1880's and involved conflict with the Sioux over hunting grounds. The town of Douglas was platted in 1886, concomitant with the arrival of the railroad. Because of the variety of energy resources present in the county -- oil, gas, uranium, coal -- residents of Converse County had experience with energy development in one form or another throughout the 1900's. Prior the 1970's however, most energy development had been in the western portion of the county, close to Glenrock. Nevertheless, the construction of a two-unit generating facility (the Dave Johnston Power Plant), oil recovery and refining, and uranium mining and milling in the 1950's and 1960's increased the assessed valuation in Converse County substantially, providing a resource base for county government and school activities.

Despite energy development, Douglas, the county seat of Converse County, remained primarily an agricultural and administrative service center through the 1960's, providing those goods and services to area farmers and ranchers that they did not obtain in larger centers like Casper, Cheyenne, or Denver.

Historically, Douglas has been one of the major towns in Wyoming, a position which was established early and was continuously utilized to forge close and powerful links between the community and the state.

Both Converse County and Douglas had experienced variable trends in population. In 1940, the population of Converse County was 6,631 (giving a county-wide population density of 1.60 persons per square mile). As agricultural activities were consolidated during the

1940's, the county population fell to 5,933 in 1950, rose to 6,366 in 1960 and fell to 5,938 in 1970 before rising dramatically to 14,069 in 1980. In Douglas, the pattern was somewhat less marked, 2,544 in 1950, 2,822 in 1960, 2,677 in 1970 and 6,030 in 1980.

According to local residents, prior to the energy growth period of the 1970's, Douglas was a relatively poor community, with close economic interdependence between the agricultural sector, the professionals and the merchants. Extremes in wealth were not made obvious, as people at different levels were similar in their patterns of recreation, dress and consumption.

Prior to development, the main source of income to the community was the ranches -- large ranches to the north of town, smaller ranches to the south -- so ranching interests were well represented in the financial institutions and county political positions, and ranchers were generally catered to in terms of policy. As a consequence, the major organizations were those dealing with land, livestock, financing, and water. The BLM and Forest Service were important to the economic base because of the substantial amount of federal land in the county.

County leadership was strongly dominated by ranchers, while town leadership was generally in the hands of merchants and professionals. However, because of Douglas' history of settlement, many of the ranchers were kin to the townspeople, which provided a degree of overlap in county/town activities and interests that was lacking in many small agriculturally based towns. Nevertheless, town and county had a history of conflict and of perceived differences in self-interest that had resulted in little cooperative spirit between the two governmental units.

Prior to growth, most residents appeared to have viewed Douglas and the surrounding area as a good place to live and raise a family, a place where one's roots were, although limited in terms of economic opportunity or variety.

II. Description of Energy Projects and Summary of Project Inputs

During the 1970's, Douglas and Converse County experienced the highest growth rate in Wyoming. This growth was almost entirely a result of the primary and secondary effects of energy development.

During the 1965-1979 period, Converse County saw a major expansion in uranium mining and milling (Kerr, McGee, Exxon, Bear Creek, TVA, Teton Exploration) followed by a sharp decline in 1980-1981 as the entire U.S. uranium industry was affected by severe over-supply and falling prices. In addition to the uranium activities actually underway, several more (plus expansions) were proposed for the area. In 1979, county employment in uranium was estimated at about 1,250 workers.

Employment in coal mining and coal-fired electrical generation was estimated at about 500 in 1980 and 1981 with at least one additional coal mine proposed for the county and an additional generating facility being discussed. In addition, throughout the 1970's, a very large-scale coal conversion facility was being proposed for construction in Converse County.

Oil and gas exploration, recovery and refining also expanded during the 1970's, though little accurate information is available concerning the number of drilling rigs and oil and gas workers actually present during the 1970's.

In addition to the energy development activity occurring in Converse County, Douglas was affected by the power plant construction in Wheatland and by the power plant, coal mining and oil and gas activities in Campbell County.

Most of the development took place more than 10-15 miles outside of Douglas. None was visible from the town.

Although some of the uranium companies contributed financial support to the development of worker housing by guaranteeing sales for developers, little was done in the way of explicit company sponsored mitigation.

III. Phases of Development

A. Initial Growth, Then Pause: 1970 to 1973

During this phase, Douglas experienced an initial sharp rise in population between 1970 and 1971 which reversed the trend of population decline. Then, despite intense talk and numerous active proposals for development, the population in both Douglas and Converse County continually declined from 1971 to 1973. Prompted by the rapid energy growth occurring in neighboring communities, especially Gillette and Rock Springs, this period was used by Douglas and Converse County residents to formulate their approach for controlling the rapid growth they saw as imminent, and for protecting the valued aspects of the community. According to community residents, it was during this period that town and county residents concluded that mutual cooperation was necessary to ensure the well-being of the community.

B. Period of Rapid Growth: 1973 to 1979

During this phase, the population of Douglas grew 96 percent -- from 3,056 in 1973 to 5,992 in 1979 -- not including population located in the area immediately adjacent to the town boundaries. The county grew by 84 percent during this same period. During the early years of this period, the community experienced considerable stress as it organized its response and marshalled its resources. By 1976, however, respondents reported that the community's response was in motion and that growth was largely under control, although shortages in housing and some public facilities continued to be problems.

C. Hiatus, Anticipation, and Decline: 1979 to 1982

Starting in 1979-1980, both Douglas and Converse County were affected by the national recession. The abrupt decline in the uranium industry in 1979 resulted in large layoffs as mines and mills were cut back and then shut down. The level of uncertainty regarding other energy development activities in the county increased as the market for coal softened and high interest rates discouraged investment. By late 1981, Douglas, and Converse County, which had been anticipating major additional growth into the mid-to-late 1980's was faced with a rapidly declining resource base, cancellation or deferment of numerous proposed projects, and a severe economic and population decline.

IV. Changes in Community Resources

A. Public Facilities and Services

By the middle of the rapid growth period, a combination of increased tax revenue (from oil production, the power plant, uranium mines and sales tax), utility hook-up/development fees, and more effective competition for federal and state grants, loans, and impact assistance enabled Douglas to substantially improve the scope and quality of public facilities and services without raising mill levies. Community residents and leaders considered this to have been an important accomplishment, achieved not without difficulty, which facilitated better cooperation between newcomers and long time residents and which clearly improved overall community resources. In addition to the construction of new schools, a community recreation center, senior citizens housing and center, a new court house and jail, ballfields, improved water and solid waste disposal systems, the county, in conjunction with the community, also sponsored day care and public health nursing.

The only complaints heard about these increased facilities and services were that they were in aggregate, too elaborate and were not in keeping with the area's long held tradition of frugality. Overall, however, everyone seemed to agree that the improvements had benefited all residents in one way or another.

B. Housing

Housing was a problem during the initial period of rapid growth, with severe shortages noted during the early growth spurt. Many local residents did not entirely approve of the rapid expansion of mobile homes that occurred during this period. Following 1975, increasingly higher interest rates made provision of single family homes ever more expensive and difficult. Some assistance was provided by collaboration between local and nonlocal developers and between developers and energy companies, who guaranteed the sale of constructed units.

Changes in community and county ordinances placed increased demands on developers, who were required to incorporate the cost of utilities and roads into their development costs. Increasingly stringent subdivision and mobile home park regulations improved the appearance of new development and ensured a better standard of living for development residents.

The sponsors of projects for the 1980's were being required to ensure that adequate housing would be made available for their workers before the state industrial siting council would approve their permits. This reduced some of the uncertainty regarding the ability of the community to respond to the projected large demands of the 1980's.

As mentioned previously, because of effective collaboration between town and county governments property tax rates did not escalate dramatically during the growth period. This, combined with the development of subsidized housing for the elderly by the county, prevented the adverse effects on town property holders that could otherwise have occurred.

C. Private Investments

It was generally reported in Douglas that local landowners and entrepreneurs recognized the opportunity for investment in local business and real estate. Although these opportunities were most readily available to the more wealthy members of the community, and those with the best information regarding development, on the whole, respondents generally reported satisfaction that the benefits had been captured by community residents rather than outsiders. Nevertheless, issues over conflict of interest and avarice did emerge on occasion.

D. New Economic Climate

As the community and county became accustomed to the changes and growth associated with energy development, many aspects of the local economy, social activities and political life became interwoven with the development activities. The community adapted to shift-work and high wages. Then came the lay-offs, declining purchasing power and surplus housing and economic capacity. Both county and community leaders took active roles in trying to promote additional energy development in the 1981-1982 decline, and a concerted effort was organized to seek opportunities for economic diversification.

V. Changes in Social Organization

A. Diversity/Complexity

Energy development resulted in notable increases in the diversity and complexity of social organization in Douglas as the new energy activities represented the only major basic economic activity outside of agriculture. The economy became somewhat more diversified, although the proximity of Casper inhibited extensive economic response. The population doubled during the decade of the 1970's and became more heterogeneous in age structure, occupations, lifestyles, values and perspectives. It was commented that this gave members of local minority groups a welcome sense of anonymity.

Community orientation shifted, and specialized groups and services were created. Particularly in terms of leadership, the community changed, with an increasing number of persons who had little or no personal or informal influence acquiring positions of considerable formal power. Leadership roles thus evolved into two increasingly distinct categories -- informal, political roles and formal, administrative ones. Newcomers with professional training were more likely than long time residents to hold the formal, administrative roles.

Rules and the enforcement of rules and formal modes of behavior became more common in response to the increasing diversity of backgrounds, interests of community residents and community needs.

B. Outside Linkages

Although Douglas and Converse County had historically established strong ties to other communities and the state, such linkages were both expanded and heavily utilized during the period of energy-related growth. Political and administrative linkages to state and federal agencies were used to obtain grants, loans, technical assistance, and political support.

As part of the energy development, a great number of large national corporations became active in Converse County. Although some local businesses complained about difficulties obtaining work from such companies, others noted that none but the larger companies had sufficient assets to develop the energy resources of the county. It was noted, however, that the linkages potentially available from such companies did not provide any substantial diversification or stability to the local economy.

The presence of large corporations and newcomers promoted a more cosmopolitan attitude among community residents in terms of news and issues and increased their sense of being actively involved in issues of national importance and attention.

C. Distribution of Resources and Power

The diversification of residents characteristics has caused substantial change in the criteria for status and the hierarchy among community residents, as the time-established patterns were disrupted by new people, occupations and opportunities. There is no longer a single tacitly understood hierarchy headed by large and wealthy ranchers and long-time business. The new people and economic activity have increased the complexity of the criteria by which both status and material goods are distributed. Traditional status assignments have become less permanent as they become less personalized. The increased economic and social complexity has created more opportunities for women and other community groups. Overall, the community appears to have become more flexible.

D. Coordination/Cooperation

One of the outstanding characteristics of Douglas' response to growth was its ability to formulate clear community goals, listen to the interests of various community groups, and marshall an effective response. Community leadership exhibited excellent capabilities for coordination and cooperation through some difficult times. The ability of the county and town to stand together and consolidate their resources and efforts was recognized as the key element in the community's ability to come through its very rapid development as well as it did. Since success breeds success, the ability of community leaders to organize this response during the early growth period was seen as critical to the sequence of events.

VI. Social Well-Being in Douglas

A. Access to Resources

Per capita income in Converse County increased more rapidly during the 1970's ($3,873 in 1970 to $9,120 in 1979) than in the United States as a whole ($3,893 in 1970 to $8,757 in 1979) but rose slightly more slowly than in the state of Wyoming during this same period ($3,672 to $9,630).

Investment capital, tax revenue, and job opportunities increased. By 1980, after the initial period of struggling to catch up, a much wider range and better quality of public facilities were available to local residents as a result of the increased tax revenue, increased population, and forecasts of continued growth. Commercial offerings also expanded in scope and quantity. Local government expanded its role in service provision during the 1970's, entering the area of housing (for the elderly), day care, and supporting other areas of recreation and human services as well.

B. Behavior Changes

Although community residents felt that Douglas had maintained its character as a nice, small town, changes in personal relationships and in public behaviors were noted. Residents, as well as officials, noted that the number of disruptive behaviors had increased. Crime, especially bad check writing, theft, and burglary, had increased, but respondents felt only a portion of the increase could be attributed solely to newcomers. Traffic congestion increased the problems created by drunken driving -- long a local problem -- and the number of clashes occurring in local bars was attributed to the increasing diversity of the population.

According to school counselors and local mental health officials, some residents had felt the stress of rapid change more acutely than others, but no persistent problems of adaptation were attributed to the changed community characteristics. The incidence of disorders was not considered particularly high at any point in the impact period. Excessive drinking was considered a serious social problem, but one not greatly increased by energy development, though certainly not reduced by it either. Many of the family problems and other behavioral problems were felt to be caused, or at least aggravated by the excessive use of alcohol. Alcohol abuse was considered the most serious problem among school children.

Child neglect and abuse were generally perceived to have increased over the study period, as were conflicts between spouses and divorce. Aside from divorce (which did increase over the period from 3:1,000 in 1970 to 8:1,000 in 1979), no data were available for comparison.

C. Perceptions of Community Well-Being

Residents -- newcomers and long-time residents alike -- reported that the community was chaotic and not a particularly pleasant place to live during the initial growth spurt, before local response was organized. During this initial period, the uncertainty -- about how bad things would get and about what should be done -- clearly contributed to residents' sense of anxiety and frustration. Once it became clear that growth was under control and that community conditions were not going to continue to get worse indefinitely, residents' perceptions of the community were improved greatly.

Residents differed considerably in their perceptions of Douglas and of the changes that had occurred. Some, primarily long time residents, continued to regret the loss of personal familiarity and informality of the pre-growth period, feeling harassed by the more rapid pace, and disoriented by their changed position vis-a-vis the community as a whole. Others appreciated the increased diversity and enjoyed the diminution of personal scrutiny and labeling that had been prevalent when the town was smaller. Others noted the increased opportunity and the increased challenge, thriving on problems to solve and new people to meet. Nearly everyone agreed that as of 1980, Douglas had benefited materially from the growth, and that, positive or negative, many changes had occurred in the everyday life of the community.

VII. Summary of Major Findings

One: The community's ability to foster joint town/county collaboration and to establish clear community-wide goals were critical to its ability to respond effectively. Decisive leadership was crucial, and was available when it was needed. The community leaders took on the problems of development as a challenge that they intended to win.

Two: Uncertainty over the extent of community change during the early growth period contributed substantially to the perceptions of tension and chaos that enhanced the adverse effects of the initial growth period.

Three: The formal planning and control procedures instituted by an outsider (brought in as town administrator) were important in attaining community control over impacts while contributing to more equitable distribution of effects. At the same time it enhanced long time residents' perception of change.

Four: The linkages to the state that the community had historically established proved important in drawing state attention to the problems of rapid growth facing Douglas during the initial growth period, and to the development of state legislation that made impact assistance available and modified the tone of development throughout Wyoming. As a municipality, Douglas did not benefit greatly from the increased property valuation associated with the development activities. Its ability to attain impact funds and technical assistance from the state and federal government was important to its ability to respond. Of equal importance was the ability of town and county leaders to identify a common interest in the community well-being and to form an effective cooperative effort to address joint problems, including revenue sharing.

Five: The community became more socially and politically diverse and complex over the study period. The large influx of newcomers provided an impetus for the establishment of more formal procedures, and for a shift away from the highly personal mode of interaction that had previously dominated. To some residents this constituted a significant loss; to others it provided greater perceived freedom.

Six: The majority of both long time and new residents favored controlled growth. By the end of the study period, the community was generally confident it could handle sustained growth of considerable magnitude and expressed support for continued energy development. Indeed, residents generally characterized Douglas' growth during the 1975-1979 period as "moderate".

Case No. 8: Wheatland, Platte County, Wyoming

I. The Community Prior to Development

Wheatland is located in the eastern portion of the state of Wyoming, on Interstate 25, approximately 70 miles north of Cheyenne and 170 miles north of Denver. Wheatland has been an agricultural community engaged in both irrigated agriculture and ranching. Although other parts of Platte County have experienced some mineral extraction activity, Wheatland has experienced none.

Wheatland's agricultural history began in the great cattle baron era of the late 1800's. This era was followed by the development of irrigation systems. With this development came a flour mill, the town's first bank, a hotel and the railroad. Wheatland was incorporated in 1905 and became the county seat in 1911.

From 1930 to 1970, the population of Platte County declined by 33.1 percent. This long-term population decline was primarily the result of out-migration, probably caused by the trend in agriculture of fewer people producing more agricultural products (especially the case in irrigated agriculture).

Primary occupations were ranching or farming and the associated retail trades and services. Wheatland appeared to be homogeneous and not highly stratified, although some very large ranches existed in the area.

Prior to development, large ranch owners and agriculturalists were the most important people in town. Agriculture, along with the railroad, was the basic economic activity in the community. Lacking extractive minerals, and having an upper limit on natural resources (land and water), Wheatland had a limited resource base.

The primary organization in town, related to agriculture, was the Wheatland Irrigation District. It is proudly pointed out that this is one of the largest privately run irrigation districts in the country. The irrigation district sets the rules and regulations by which farmers receive and irrigate with the district's water. Other organizations include churches and civic organizations.

Prior to development, Platte County was (and still is) controlled by conservative agricultural interests. Town politics in Wheatland appeared to be more in the control of local businessmen. An Industrial Planning Committee had been formed by the townspeople to attract industry to Wheatland and an industrial park was designated by the town.

Attitudes toward development seemed to vary directly with the person's source of income or wealth in the community. For the most part, those with land based wealth were resistant to change (construction of the power plant); those who relied on secondary economic activity (commercial, retail businesses) for their source of income were generally in favor of building the power plant. Attitudes seemed to be correlated to the perceived benefits one's family was likely to receive from development.

II. Description of Energy Projects and Summary of Project Inputs

A. Projects

The one and only major energy project to come to Wheatland was the Missouri Basin Power Project (MBPP), a 1,500 megawatt coal-fired steam plant, located approximately five miles northeast of Wheatland. The Missouri Basin Power Project employed construction workers on an annual average basis as follows: 187 in 1976, 548 in 1977, 1,867 in 1978, 2,344 in 1979 (peak year), 2,203 in 1980, and 1,009 in the third quarter of 1981. The population of Platte County and all incorporated towns is given in Table II.1 for 1960, 1970, and 1980.

B. Direct Project Mitigation Activities by Project Developers

Mitigation activities were supervised by the Industrial Siting Administration (ISA) and Basin Electric Power Cooperative, manager of the Missouri Basin Power Project. The permitting process through the ISA was to ensure that adequate mitigation was planned.

Two main problem areas identified early in the planning process were housing and schools. MBPP built Black Mountain Village, a planned unit development (PUD), on the edge of Wheatland to help alleviate the housing problem. Black Mountain Village provided bachelor quarters, a mess hall, recreational vehicle pads, bath houses, mobile home spaces, and a recreation center for in-migrants. In the early stages of development, MBPP also made money available to the school district so construction could begin on a new school before bonds were sold.

It is estimated that the total mitigation package was approximately $12 million. Since development has peaked, MBPP has made generous offers to the school district to sell such real estate as the mess hall and associated outbuildings at a fraction of their appraised price. (Currently the same buildings are being rented to the school district at below the market price.)

III. Phases of Development

A. The Pre-Impact Phase: Early 1970's

The pre-impact stage in Wheatland is identified as the stage prior to construction of the MBPP when the Impact Alleviation Task Force was formed. An industrial planning committee actually predated the Task Force. This group then evolved into the core of the Task Force, which was important in identifying mitigation areas. It was during this stage that housing and schools were identified as the two main problems. The Task Force formed the following committees: Human Services Committee, Housing and Finance Committee, Community Integration Committee, Economic Development Committee, and Tourism and Recreation Committee. The accomplishments of the Task Force are difficult to separate from the adaptive changes that took place in the community from 1974 to the present, since members of the Task Force represented many local agencies.

B. The Impact Phase

The impact of the construction work force on Wheatland was minimized primarily by two factors: mitigation arrangements for housing and the large number of communities in the area. Black Mountain Village with its bachelor quarters, mess hall, RV spaces, mobile home spaces and recreation center alleviated much of the impact. Also, a large percentage of the workers (73 percent in 1978, 68 percent in 1980) commuted either on a daily or weekly basis. The anticipation of impact was much worse than the actual impact during this period.

Examples of change and adaptation listed in the Task Force chronology include:

- housing authority established by Platte County Commissioners
- senior citizen housing built
- city-county airport authority established (1974)
- planner hired by Platte County Planning Commissioner (1975)
- day care corporation formed (1975)
- social services sub-committee formed incorporating mental health, senior citizens, D-PASS, and the ministerial association
- human services team placed in Wheatland from the University of Wyoming and advisory board formed
- monitoring board formed to monitor impact of MBPP (1976)
- new elementary school built (1977)

C. Post Impact Phase

Construction employment at MBPP has dropped off drastically in 1982 with completion of the plant planned for 1983. The construction layoffs have coincided with a major economic downturn in the national economy.

The Economic Development Committee broke away from the Impact Alleviation Task Force and became affiliated with the Chamber of Commerce. The committee has produced a promotional publication describing Wheatland and Platte County to prospective industries. Wheatland residents (especially merchants) enjoyed the economic boost and see controlled industrial development as a way to make the community economically viable in the future.

Wheatland's 1980 population was 5,816 (down from a projected peak of 8,020 in 1979). All agency heads maintain they are not overstaffed because they knew the decline was coming and never built up to meet peak population demands. In general, Wheatland seems to have taken into account the inevitable decline in economic activity when the project was completed and did not overbuild.

IV. Changes in Community Resources

A. Mitigation Activities

Mitigation activities by Basin Electric were described previously in Section II.

B. Private Investments

There was little large scale development in Wheatland in response to MBPP. General private investment took the approach of expanding existing businesses and services. Some small specialty shops were started but have either gone out of business or are in the process of doing so. It is difficult to separate the influence of the phase down of MBPP and the general downturn in the national economy. The other main area of private investment was small subdivisions platted around Wheatland, but there was little demand for lots.

C. Citizen Response

There were two organizations specifically formed in reaction to the MBPP: the Laramie River Conservation Council (LRCC) and the Goshen-Platte Protection Association (GPPA). The LRCC was originally formed because of water issues and were concerned with the long-term effects on the region. Once formed, however, the LRCC became the chief advisor to MBPP, forcing justification of its projections, engineering designs, estimates, etc. The focus of the GPPA was the power transmission lines connecting the MBPP to the power grid in Nebraska.

The emergence of such groups, often referred to as "consistency formation", is important so that dissenting voices can be united and heard. Other than these adversary groups, which seemed to emerge primarily in the county, Wheatland residents were generally in favor of development.

D. Housing

Building in Wheatland was suppressed because of Black Mountain Village. There were only 267 residential building permits issued from 1974 to 1980. Added to this were approximately 150 multi-family units during the same time span.

E. Merchants and Workers

No oldtimer - newcomer dichotomy emerged from the Wheatland experience. Conflicts related to newcomers usually revolved around labor relations, rather than community relations. It is anticipated that the permanent employees will be an important addition to the Wheatland community.

F. Service Demands

Service demands in many areas increased with development. New schools were built, policemen, sheriff's deputies, and social workers were hired, ballparks were built and a planner was hired during the impact years. MBPP built a new recreation center and another city pool is planned. A senior center and senior citizen apartment complex was built to alleviate much of the strain of impact on the elderly.

Two primary agency changes can be noted. Specifically, agencies became more _formal_ in operating procedures and they also became more _interdependent_ by referring clients from one agency to another (many with programs non-existent prior to development).

G. The New Economic Climate

Uncertainty and guarded optimism best characterize the present economic climate. The project effects, however, can not be separated from the effects of the general economic situation of the country as a whole.

V. Changes in Social Organization

A. Diversity/Complexity

Increased political differentiation in Wheatland is evidenced by the creation of the Platte County Impact Alleviation Task Force, the Laramie River Conservation Council, the Goshen-Platte Protection Association, and by the increasing number of new positions in the various service agencies.

Increased economic differentiation occurred with the construction and operation of MBPP. There were several new specialty type businesses that opened in town (craft/hobby shops, sports shop), and a few new restaurants began operation during construction of MBPP.

Some examples of the social differentiation brought on during the construction phase of MBPP are the creation of a theater group, and hobby classes and recreation teams organized by the Parks and Recreation Department.

B. Outside Linkages

Wheatland experienced an increase in extra-local linkage directly related to the MBPP, and became more interlocked with the national economy. Decisions made elsewhere in the region affect workers living in Wheatland more now than before; union activity during construction was probably controlled from regional centers.

Construction workers remained linked to their "home communities" and some ranchers sent their children to neighboring counties to school. Both of these linkages probably added to the diversity of ideas, values, and lifestyles found in Wheatland.

Overall, the small amount of extra-local linking that did occur in Wheatland lead to loss of local control only in the economic sphere; social extra-local linkages probably contributed to more diversity in the community.

C. Distribution of Resources and Power

Wheatland was a fairly homogeneous, agricultural community prior to development. Now Wheatland is a fairly homogeneous, agricultural community with a power plant outside of town. Most of the construction workers are gone now, but the number of professionals in town has increased. This has the potential for changing politics in Wheatland.

In the county, it is expected that agricultural interests will continue to dominate over the short term. However, as Wheatland's population reaches 50 percent of the total county population, some political changes might occur.

D. Coordination/Cooperation

In terms of political integration, Wheatland and Platte County are at odds over how the increased tax revenue from MBPP should be spent. Basically, Wheatland has been described as the poor cousin to the county since the county gets most of the tax revenue. In terms of economic integration, the business community seems well integrated. The Chamber of Commerce has been formed and the Economic Development Committee has associated with the Chamber, which now puts out a newsletter for its members.

At the social level Wheatland appears to be a well integrated community. Membership in voluntary associations such as churches, softball teams, bowling leagues, and the community theater indicate individuals are connected to their community. Oldtimers indicate the town was, for the most part, receptive to newcomers - a point with which newcomers agreed.

VI. Changes in Social Well-Being

A. Access to Resources

Access to resources was assumed to increase because of the construction of MBPP. The higher wages paid by the project forced local business and government to pay more to retain their help. However, some who were unable to share in the new higher income were likely worse off because of MBPP, specifically, older people who were no longer working and people involved in agriculture.

B. Behavior Changes

Both the Platte County Sheriff and the Wheatland Police Chief indicated that there was increased crime with development. Much of this was alcohol related, such as brawls and driving under the influence. In Wheatland the largest increase in crime has been with violent domestic disturbances, again usually involving alcohol. It is interesting to note that the sheriff has had more trouble post impact than during impact.

Indicators of family disruption are divorce rates, families receiving Aid to Dependent Children (AFDC) and increases in family counseling caseloads in the Department of Public Assistance and Social Services (D-PASS). The divorce rate for Platte County actually decreased slightly from 1970-1978 while absolute numbers of divorces increased. The number of families receiving Aid for Dependent Children almost doubled from 1975 to 1981 and family counseling caseloads for D-PASS increased by 425 percent over the same time period. There is no simple explanation for increases in certain types of family disruptions.

Although data is difficult to come by, probably the best available indicator of child abuse and neglect is participants in the Foster Care Program. In Platte County, there were 88 children in 1975, 172 in 1976, 68 in 1977, 72 in 1978, 67 in 1979, 45 in 1980, and 52 in 1981. Except for 1976 the data show no increase in foster care with development.

C. Perceptions of Community Well-Being

Perception of community varies by an individual's position in the community. The one thing that is clear about Wheatland, Wyoming is that most residents are satisfied with their community, proud of it and think it is a good place to live. They feel the environment is wholesome, the community is friendly, the schools are good and services are adequate.

VII. Summary of Major Findings: Wheatland, Platte County, Wyoming

One: It is clear that Wheatland was very successful in handling the impact brought on by the construction of the MBPP. There are at least four reasons why development proceeded so smoothly:

1) the large percentage of daily and weekly commuters;
2) the Task force formed in the early stages of planning;
3) the mitigation arrangements made by the Industrial Siting Administration and Basin Electric; and
4) the construction of Black Mountain Village.

Two: Because the community realized that the surge in population was mostly temporary, little differentiation occurred. Politically, local entities did not expand to the point that they now have to contract. Economically, it is impossible to separate the effects of the MBPP from the general economic climate of the nation. The social differentiation that has occurred has been well accepted by the community.

Three: The Industrial Siting Administration's permitting process was important in encouraging orderly, responsible development and is perceived that way at the local level.

Four: In terms of stratification, it seems that change is inevitable at the county level. Dissatisfaction with the county commissioners' distribution of the new-found wealth could eventually lead to political change, especially if Wheatland's population stabilizes at approximately 50 percent of the county's population.

Five: Within the stratification system, it appears that conflict over the MBPP may have temporarily exaggerated the differences between agriculturalists and local businessmen. Once construction has been completed, the major source of conflict will be much less evident.

Six: Wheatland is a well-integrated community. However, there is a potential problem in the lack of integration between the county and Wheatland, with the county representing agricultural interests and the town representing more urban interests.

Seven: The long-term consequences of development of the MBPP are unknown at present. If Platte County attains the increased tax revenue for the expected thirty-year life of the power plant without problems over water, the local residents will probably benefit from having the power plant located within the county. If, for some reason, the plant ceases operating, the county could find itself saddled with large debts that would be difficult to repay. If problems arise over municipal water systems, ranchers and farmers and/or MBPP could end up as the long-term losers.

Case No. 9: Forsyth, Rosebud County, Montana

I. The Community Prior to Development

Forsyth is located on the Yellowstone River in the central portion of Rosebud County, approximately 130 miles northeast of Billings and 45 miles west of Miles City. Interstate 94 was constructed through Forsyth in 1970-71, resulting in the destruction of a portion of the town's residential area.

Forsyth was located along two rail lines, and was a division point for the Northern Pacific Railroad. As a result, Forsyth developed as a railroad town which was also a service center for the surrounding ranchers and farmers.

In the 1920's, the Northern Pacific Railroad opened a rail spur to Colstrip, 38 miles south, where it established a coal mine to supply fuel to the railroad. Coal production increased through 1943, with Colstrip growing from only a few residents to nearly 600, and Forsyth experiencing increased employment by the railroad and mine workers.

Forsyth was incorporated in the early 1900's and became the county seat of newly established Rosebud County. Until the time of the study, Forsyth remained the only incorporated community in the county, providing governmental and commercial services to a number of small service centers scattered throughout the county. The Northern Cheyenne Reservation is located in Rosebud County, increasing county contacts with Native Americans and the various institutions and regulations associated with reservations.

From the mid-1940's, the population and economy of Forsyth and Rosebud County declined, as agriculture and rail transportation followed national trends of decline and consolidation. This occurred despite a high net natural increase among the Native American population. In 1970, the population of Forsyth was 1,873; that of Rosebud County was 6,187.

Primary occupations in Forsyth were service, government and TCPU, although the county showed a higher proportion employed in agriculture than the state as a whole. The majority of the county's land area was devoted to agriculture.

Prior to development, Forsyth maintained overlapping leadership and stratification systems. The town community recognized rail, energy, business and ranching interests, with community leadership concentrated among those in business. The county government, also located in Forsyth, was based on and focused almost entirely on the ranching and farming community. Because of the size of the county, contact between ranchers in the north and those in the south (where the energy resources were located) were limited.

Forsyth was sandwiched between the Yellowstone River (from which it had adequate water rights to meet community needs) and the new interstate. However, adequate land was available for development in the surrounding unincorporated area.

The primary organizations in Forsyth, along with the churches, were the city and county governments, fraternal organizations (especially the Lions), and the rail labor unions. The town's Chamber of Commerce was also active.

Prior to development, Rosebud County was controlled by conservative agricultural interests, while town politics were more diversified and tended to reflect business and railroad interests.

Both prior to and during the impact period, most residents and nearly all town leaders expressed approval of development, although none wanted growth of such magnitude that its effects could not be controlled. Ranchers, especially those in the south near the energy deposits, expressed strong and adamant opposition to energy development.

II. Description of Energy Projects and Summary of Project Inputs

A. Projects

In 1958, Montana Power Company purchased the Rosebud Mine and the town of Colstrip from the Northern Pacific Railroad. In 1968, the mine in Colstrip was reopened, although at low production levels. Coal from the mine was shipped to Billings to fuel the power plant there. In 1972, construction started on the first two 350 MW units of the Colstrip generating facility. Construction employment on these units peaked in 1975 (1,632 construction workers) and the units went into operation in the late 1970's. Meanwhile, plans had been announced for the construction of two additional 700 MW units at Colstrip. As a result of extensive opposition (largely by environmentalists and the ranchers), construction of these units was delayed until 1980.

The other coal-related activity in the county was the Big Sky Mine operated by the Peabody Coal Company and located south of Colstrip. This mine started in 1969 and employed approximately 100 workers during the later part of the 1970's.

B. Direct Project Mitigation Activities by Project Developers

Mitigation activities were undertaken by Montana Power Company, and focused on Colstrip, the company-owned town proximate to the energy activities and 38 miles south of Forsyth.

A comprehensive townsite planning, design and implementation program was initiated in 1973 when it became evident that controlled development was not possible without major company involvement. Montana Power Company coordinated and sponsored the construction and administration of the town of Colstrip which grew in population from 200 people in 1970 to over 3,000 in 1975. All areas of municipal facilities were addressed -- housing, water and sewage, commercial facilities, parks and recreation and education. Provision of facilities lagged behind the build-up of the work force during the construction of units 1 and 2, but has maintained its schedule in providing for workers associated with units 3 and 4.

It is estimated that MPC's investment in Colstrip has exceeded $80 million. An elaborate plan for converting construction phase housing and facilities to permanent facilities has been implemented to prevent transition difficulties and additional costs.

III. Phases of Development

A. Pre-Impact: 1970 to 1972

The pre-impact phase occurred while mining was actually underway at the Rosebud and Big Sky mines. This period was characterized in Forsyth as one of anticipation tinged with lack of certainty that the proposed generating station would actually occur. No specific impact-related plans were made in Forsyth during this period, although many actions were being taken in Colstrip.

B. The Initial Impact Phase: 1972 to 1976

The initial impact phase began with the build-up of the construction work force in Colstrip. Because facilities there were inadequate, workers and support staff migrated into Forsyth, raising the population of the town to approximately 3,000 in 1975, not including those housed in the unincorporated area around the town. A crash construction program in Colstrip including provision of bachelor facilities, mobile homes, and single family dwellings, substantially reduced the impact on Forsyth, but the community's already inadequate facilities were severely strained. Confusion and anxiety resulted when plans for at least two and perhaps three additional Colstrip units were announced (each 700 MW). School enrollment in Forsyth exceeded forecasts by almost 300 students.

A city-county planning board and the city council invoked zoning regulations to restrict the location of mobile homes within Forsyth city limits and to contain population growth. The Montana Coal Board was formed and provided grant monies to assist impact response in Forsyth.

C. Hiatus and Conflict: 1976 to 1979

Between 1976, when construction activity on units 1 and 2 was being completed, and 1979, when the permits for units 3 and 4 were finally issued, uncertainty and conflict prevailed. Organized opposition by the ranchers and environmentalists as well as disarray within Montana siting agencies continued to delay, and threaten, the construction of units 3 and 4. In 1979, Forsyth approached Montana Power Company to issue the industrial bonds necessary to finance the pollution control equipment for the new units. The city received a $750,000 payment for providing this service.

During this period the population of Forsyth dropped from its peak of over 3,000 persons to 2,553 in 1980, prior to the major work force build-up for Colstrip units 3 and 4. Also, mining continued at the Rosebud Mine (approximately 340 employees), at units 1 and 2 (approximately 310 employees) and at the Big Sky Mine (approximately 100 employees).

Since major impacts were still anticipated in Forsyth from the construction of units 3 and 4, this period was used as a catch-up time for the community to prepare itself. Unemployment increased during this period as workers remained in the community waiting for work on the new units to begin.

D. Second Impact Phase: 1980 to time of study (fall 1981)

Contrary to expectations, little effect was noted in Forsyth during the second work force build-up at Colstrip. This was primarily because of the rapid expansion of housing in Colstrip (constructed by Montana Power Company) and the improvement in conditions which made Colstrip a substantially more desirable place to live than in the mid 1970's. As a result, fewer workers located in Forsyth.

Businesses in Forsyth, which had expanded in anticipation of continued growth were adversely affected, though it is hard to determine what portion of the economic difficulties are the result of depressed national economic conditions and what portion could be attributed to energy development effects.

Social services, except schools, are generally provided from regional centers in Montana, with field staff located as needed (provided funds are available). Compared to Colstrip, most service providers and residents did not consider Forsyth highly impacted during the 1980-1981 period.

IV. Changes in Community Resources

A. Mitigation Activities

Mitigation activities included the townsite expansion efforts of Montana Power Company that started in 1973 and continued throughout the study period. These were, and continued to be, of major importance in understanding and evaluating the effects on Forsyth of the large-scale energy development activities in Rosebud County because they drew off a large proportion of the population which would otherwise have migrated to Forsyth.

The establishment of the 30 percent severance tax and the Montana Coal Board with authority and funds to assist impacted local jurisdictions was also critical to Forsyth's ability to respond. Monies from the Coal Board were obtained by Forsyth and the school district which enabled them to reduce the high property tax burden while providing much needed services and capital facility improvements.

B. Private Investments

There was little large-scale development in Forsyth in response to the energy development in Rosebud County, though rail facilities and personnel showed a direct increase. This was attributed to the moderate impact experienced in the first phase, to the overall uncertainty of the development sequence, and to the recent history of decline in Forsyth which raised questions about its long term future. Generally business owners felt that energy development would boost the local economy temporarily, but that the long term effect on business conditions might not be so favorable. Some of this uncertainty had to do with the future characteristics (and potential competition) of Colstrip.

During the initial impact phase, both housing and land were difficult to obtain (the impact period coincided with the national depression and rise in interest rates, which undoubtedly had an effect on local development). What economic growth was prompted during the initial phase of impact appeared stymied by the interim period and the lack of growth during the second phase.

C. Citizen Response

A number of organizations were formed specifically to protest the proposed energy development activities in Rosebud County. The earliest were vehemently anti-development, and were initiated by area ranchers and environmentalists. These groups were formed in the early 1970's in response to the announcement of the proposed activity, and persisted throughout the study period. Opposition was intense and effectively organized. The opposition groups are attributed with substantial responsibility for the delay in construction schedules, especially of units 3 and 4.

In the late 1970's, a pro-development organization emerged in Forsyth. Overall, residents of Forsyth seemed to favor the development, both prior to and during the impact period.

D. Housing

Housing expansion in Forsyth was inhibited for some of the same reasons that business expansion was constrained -- uncertainty about the development schedule, and uncertainty over the area's long term economic future. Housing in the Forsyth area was particularly limited in the early 1970's due to the recent demolition of a large portion of the town's residential area for construction of I-94. Mobile home development occurred in response to demand, but the city council enforced its legislation against mobile homes, forcing development into the unincorporated area of the county.

E. Merchants and Workers

Forsyth received primarily non-management workers, with a high proportion of construction laborers; management and operations personnel located in Colstrip -- a specific consequence of MPC's housing and townsite development policy.

The lack of interaction between long time residents and newcomers was consistently noted. This was attributed to Forsyth's role as a minor shopping center and bedroom community to the in-migrants. Ranchers complained about nuisance trespassing, and there were some bad feelings about newcomers "taking over" local bars, but overall, relationships appeared limited but fairly congenial.

F. Service Demands

Service demands increased in the 1973-1976 period. Causing particular difficulty was the overall poor quality of Forsyth facilities and services prior to impact, the uncertainty over the magnitude and schedule of development and the low tax base in the community. The municipality raised taxes to their legal limit and added services where it could. As soon as funds were available from the Coal Board, Forsyth applied -- successfully -- and services were improved during the later part of the decade. By this time (although it was then unknown) the major period of impact was past.

During this period agencies became more visible and active in the area, but Montana's regional distribution system made changes in staffing and administration somewhat remote to the community (Forsyth was generally served out of Miles City). Most human service agencies stepped up their services during this period -- a regional phenomenon. Law enforcement was a particular issue, subject to complaints about increasingly formal procedures. The county was attempting to implement a combined city-county law enforcement program at this time, which probably compounded problems.

G. The New Economic Climate

Uncertainty and guarded optimism characterized the first impact phase in Forsyth. Bewilderment and dismay characterized the interim and second phases, as anticipated population and economic growth failed to materialize. Most of the additional growth during the second phase took place in Colstrip.

V. Changes in Social Organization

A. Diversity/Complexity

Most newcomers to Forsyth were Montana residents from small towns (MWRI, 1975), which substantially reduced the potential for social or political differentiation. Given the relatively low level of impact, little differentiation occurred in either the political, economic or social spheres. In part this was because of Forsyth's long-standing role as county seat and its previous experience with the railroad and energy development.

During the study period, the distinction between townspeople and ranchers was heightened, though it had already existed.

Little change was observed in the structure of local government, though a city-county planning board was established in response to the need for better land use and zoning controls. This limited change appears to be a result of the presence of relatively formal political structures prior to development, to the low magnitude and sporadic duration of development effects, to the centralization of state-sponsored service agencies outside the county, and to the expansion of facilities and services in Colstrip.

B. Outside Linkages

Forsyth experienced a substantial and beneficial increase in extra-local linkages as a result of the development. As the only energy impacted county in Montana for many years, Forsyth received the attention of many outside groups, including state government. In several important instances, this resulted in the receipt of additional funds, information and expertise by the community.

Given its experience with the major railroads and energy development companies, not to mention national agricultural markets, Forsyth was well experienced in having no control over important economic decisions/factors. Nevertheless, their link to the Montana Power Company regarding the industrial bonds yielded them a substantial economic boost when the town was selected to perform this service.

Construction workers generally did not become involved and active in the community, but maintained their ties and affiliations elsewhere.

Overall, the additional extra-local linkages established in Forsyth during this period appear to have increased local leverage and ability to respond to area demands. However, ranchers in the southern portion of the county would feel completely differently. They perceive that their way of life has been threatened by the imposition of outside decisions and that their establishment of similar outside ties (through the Northern Plains Resource Council and with various national environmental groups) did not result in sufficient power to avert these decisions.

C. Distribution of Resources and Power

The established stratification system in Forsyth appeared to be relatively complex as a result of its history of growth and decline. The system was resilient enough to prevail despite the conflict between the town and the ranchers and the increased role of energy company officials and outsiders.

Although ranchers lost ground county wide, the major elements and relative ranking of the different groups did not appear to have been greatly affected by the growth at the time of the study. Agricultural interests have continued to dominate at the county level, though as Colstrip matures, it may play a critical role in influencing county priorities. For many years prior to the study period, Forsyth had been clearly aligned with trade and pro-growth interests.

D. Coordination/Cooperation

Within Forsyth itself, the leadership has demonstrated an ability to coordinate town effort and to elicit cooperation from the large majority of town residents, even in such unpleasant actions as raising local tax levies. Respondents generally felt that newcomers, though not welcomed warmly into the community, were treated fairly, and that the town had been conscientious about providing for newcomer as well as overall community well-being. Coordination between the town and the county was not very good, and received criticism from leaders and community residents alike. Despite significant differences in revenue availability, no collaborative approach was devised that allowed the town to share the increased tax revenue with the county. Pressure was applied to the county government by the ranchers to oppose development; this antagonism inhibited the development of a joint city-county perspective that could serve as a basis for cooperation.

VI. Changes in Social Well-Being

A. Access to Resources

During the initial impact period, access to community resources declined as the community had difficulty maintaining service levels and was unable to rapidly expand dilapidated and inadequate systems. By 1981, however, access to resources -- jobs, facilities and services -- had improved substantially over pre-impact levels. This was primarily due to the increased mill levy and coal board funds, both of which were imposed with anticipation of impact that did not materialize. Except during the 1975-1976 period, little inflationary effects attributable to energy development were noted except in housing. Property taxes were substantially increased during the early period of impact, placing a heavy burden on long time resident landowners. Per capita income was increased.

B. Behavior Changes

Although some respondents noted that crime increased during the impact period, this was not felt to have been a major problem. The increases were reported to have been primarily in theft and bad check writing. No major problems with the behavior of newcomers was noted, though strong anticipation of problems was consistently expressed during the early impact period.

No significant increases were noted in welfare or social service demands. Insufficient data are available for Forsyth alone (separated from the county as a whole) to address other behavioral indicators.

C. Perceptions of Community Well-Being

Data for the initial impact period indicate a general belief among residents that development was desirable and advantageous. Nevertheless, anxiety was expressed about the degree of impact, the extent of influx of unfamiliar and possibly undesirable persons, and the adverse effect on community services and facilities. At the time of the study, Forsyth residents generally reported positive feelings about the community and its response to the demands of development, but expressed concern about the long term economic future of the community. The large majority of town residents appeared to feel that energy development had been and would continue to be a positive force in the area.

Case No. 10: Ashland, Rosebud County, Montana

I. The Community Prior to Development

Ashland is located in the southern third of Rosebud County, Montana, immediately adjacent to the Northern Cheyenne Reservation. The Northern Cheyenne Indians have long called the Ashland area their homeland. White settlement began in 1880; most of the early settlers were ranchers and farmers who migrated to the area from 1880 to the early 1890's. Many of the descendants of these white settlers remain in the Ashland area. At about this time, the St. Labre Mission was established as a mission and school for the Indians. Both the reservation and mission have played an important role in Ashland.

Despite a long history of living in the same community, the whites and Indians have not become well integrated. The two groups remain culturally and socially segregated. However, the proximity of the reservation guarantees that they will continue to jointly inhabit the area, a fact that will continue to play an important role in the community life of Ashland.

Ashland enjoyed its most prosperous times and largest population between 1912 and 1923. Since then, it has remained a rather small, unincorporated town of about 400 persons.

Ashland's original economic base was agriculture, related to the early ranchers and farmers who settled the area. However, the present base has expanded to include a sawmill (when it's open), the St. Labre Mission and school, and the reservation. Local ranchers and farmers have traditionally done a large portion of their shopping outside the area.

Despite the scale of energy development that occurred in Rosebud and Big Horn counties (see Case No. 9) and expectations of major population and employment growth in Ashland, few changes actually occurred. Consequently, the changes that did occur in Ashland during the study period resulted primarily from the expectations and uncertainties associated with energy development, rather than its physical or economic manifestation.

II. Description of Energy Projects and Summary of Project Inputs

The projects with the potential for affecting Ashland are the same as those described in Section II of the Forsyth summary and will, therefore, not be repeated here.

Because of Ashland's lack of facilities which would attract energy development workers, poor transportation links, and the extensive mitigation activities by Montana Power Corporation in Colstrip, few people relocated to Ashland as a result of energy development, and few Ashland residents obtained energy-related jobs.

Throughout the 1970's, however, alternatives were proposed for development of the coal reserves in the southeastern portion of the county, especially along Rosebud Creek and the Tongue River. Combined with the uncertainty of the geographic distribution of impacts from activities at Colstrip, substantial growth was either anticipated as a positive event or considered with apprehension. The possibility of impending impacts did result in some changes in community facilities, in community social organization, and in residents' perspectives on community life.

III. Phases of Development

The development of concern is that which occurred in Rosebud County, especially in Colstrip and Forsyth. There were three phases of development: first, from 1972-1976, the construction period for Colstrip Units 1 and 2; second, from 1977-1979, the hiatus between construction activities; and third, from 1979 to the time of the study, the construction period for Colstrip Units 3 and 4. Ashland has been minimally affected by these developments.

IV. Changes in Community Resources

Although Ashland was not affected by the development of Colstrip, it certainly expected to be. Ashland residents also expected to be affected by the development of the Montco Mine near Ashland. In response to these anticipations, Ashland was able to build a new elementary school, largely with funds from the state's coal board. In the late 1970's, Ashland built a new sewer system as required by the

Environmental Protection Agency. The Farmers Home Administration, which backed the project, required that the system be large enough to serve 2,500 people, the expected size of Ashland in 1990 because of anticipated local energy development. The result was considerable excess capacity. No other major changes in community resources occurred.

V. Changes in Social Organization

A. Diversity/Complexity

Ashland exhibits little political diversity for two reasons: 1) it has no formal political structure since it is an unincorporated community, and 2) the formal positions that do exist (water and sewer, the Fire Board) are held by the same persons who hold informal power, resulting in nearly complete congruence of formal and informal leadership.

Leadership has continued to be comprised mainly of Ashland businessmen who have a long family history in the area, with positions of leadership held primarily (but not entirely) by males and limited exclusively to whites. At no time during the study period did Indians hold any leadership positions nor were they considered to be informal leaders of the community. However, the Indians have established some informal leadership positions among themselves. The people who fill these positions serve as "spokesmen" for the Indians to non-Indian audiences.

Little was expected of community leaders throughout the study period; rather, a great deal of emphasis was placed upon individual and family self-reliance. The typical pattern for addressing problems was to approach a leader on an informal basis and work out a solution prior to any formal or public pronouncement of the problem. Generally, formal types of relationships were looked down upon by residents in the area.

Economic diversity in Ashland was limited throughout the study period. Most local economic activity centered around the sawmill, the mission, and the few commercial establishments which serve both community residents and residents of the reservation. The economic base in Ashland has thus been explicitly controlled from outside the community since the turn of the century.

Businesses in Ashland are small, locally owned, and cater to the daily needs of community residents. At the time of the study, the businesses in Ashland included two bars, two gas stations, a beauty shop, two grocery stores, a craft shop, a motel, a hardware store, and a bank. In addition, a Montana state liquor store and a U.S. Forest Service office were also located in the community. The sawmill and the mission, the two largest employers in Ashland, recruit almost all of their employees from outside the community, while the businesses in Ashland draw their employees from family and other community residents.

Considering its size and geographic isolation, Ashland is an extremely fragmented community. The complex social distinctions made among community residents resulted in the emergence and reinforcement of numerous social groups which have traditionally not gotten along very well together. Indeed, little interaction between groups occurred; most community interaction took place within groups.

The social groupings were not confined to an Indian-white split. There are distinct social groups among the whites and among the Indians, as well as between the whites and Indians. Among the whites, social distinctions are made on the basis of criteria such as length of residence in the community, occupation, and place of residence. Among the Indian population, distinctions are based on heritage and place of residence.

There is a good deal of racial antagonism between the whites and Indians in Ashland related to stereotyping and resentment concerning resource allocation. When queried, the whites in Ashland are likely to say that relations between the groups are "good". To a large extent, this appears to be because of the distribution of power within the social organization of the community and the whites' dominance of leadership positions. If challenges to leadership positions were made, the whites would probably change their assessment of the relationship.

Little change occurred in the political, economic, and social diversity of Ashland over the study period. It is evident that, despite the magnitude of energy development in the county, it did not provide sufficient impetus to significantly alter the prevailing differentiation characteristics of Ashland.

B. Outside Linkages

Extra-local linkages are the mechanisms by which Ashland established and maintained ties to the larger society. Over the study period, some new and important political linkages were established. Substantial growth was anticipated in Ashland from the development of the Montco Mine and from construction of Colstrip Units 1 and 2. Though only a few additional families actually located in Ashland as a result of energy development (and these for only a short time), the anticipation was so strong that the community built new water and sewer systems and constructed a new school. When the coal board was established in 1976, Ashland successfully applied for assistance to help pay for these new facilities. The requests were made directly to the coal board by the water and sewer board and the county superintendent of schools. The receptiveness of the coal board to requests from the community gave Ashland the ability to act independently of the county commissioners and provided a link to a revenue source that was not tied to the county.

Also during this period, Ashland's linkage to county government was strengthened with the election of an Ashland resident to a place on the county commission. This opened a new opportunity for the views and needs of Ashland residents to be known and represented at the county level.

Economically, Ashland is totally dependent upon the larger society. Its two largest economic entities, the sawmill and the mission, are controlled by outside interests, while the businesses in Ashland are all dependent on outside suppliers. Also, for purchase of major durable goods, residents of Ashland must go to larger centers. In essence, Ashland has little control over its economic life.

Because there is a relatively large amount of in- and out-migration in Ashland, there are a large number of extra-local social linkages. Those who move into Ashland for work in the mill, mission, and school maintain their linkages to friends and family outside the community. Because of this, these newcomers have as their reference group those outside the community with the consequence that the expectations, values, and beliefs of the long-time residents have little effect on newcomers. Moreover, this maintenance of strong extra-local linkages by newcomers keeps the community fragmented and the social groups apart.

C. Distribution of Resources and Power

The concept of stratification discussed here is one of differential access to political positions, economic resources, and social esteem. The stratification system experienced little change over the study period and is fairly similar for the political, economic, and social dimensions.

As mentioned above, there are only a few political positions in Ashland, notably membership on the Water and Sewer Board and Fire Board, with only those served by the water and sewer systems and the fire district eligible to hold these positions.

During the major portion of the study period, the composition of the two boards was identical with the exception of one member on the Water and Sewer Board who was appointed to represent the St. Labre Mission. All the board members were long-time residents (with the exception of one relative newcomer on the Water and Sewer Board) and were defined as community leaders prior to attaining the board position.

The informal leadership in Ashland included a few more people than the two boards, but it was similarly restrictive. Persons mentioned as "community leaders" were predominantly long-time, white residents.

In effect, Indians and newcomers were largely excluded from positions of influence in the community. For Indians, the major reasons appeared to be the effects of affiliation to the reservation and of discrimination; for newcomers, the major reason seemed to be their impermanence in the community. Neither Indians nor newcomers have actively challenged the positions of those who currently hold power.

Economic stratification reflects the ability of community members to engage in economically rewarding activities, as well as being able to improve one's economic position. Because of Ashland's small size, very few economic positions were available in the community, and no expansion of the economy had occurred for a long time. Most businesses in Ashland are locally owned, and entrepreneurs tend to be long-time, white residents. The establishment of a new business is a rare event in Ashland. Thus, in effect, Indians and newcomers are largely excluded by a lack of business opportunities rather than any kind of systematic or deliberate exclusion by the white businessmen.

Access to business-controlled resources is another matter; here systematic differentials were maintained. Except at the sawmill and mission, Indians held few jobs in Ashland. Also, newcomers generally work at the sawmill, mission, school, or the Forest Service office. Newcomer whites are generally recruited into the community for employment because there are few residents in Ashland who have the necessary skills needed by the school, mission, and mill.

The local bank became a particular point of controversy concerning access to business-controlled resources. The bank was established by Father Huffman of the Mission with the express purpose of helping Indians gain some experience with financial institutions. For some years, this goal influenced bank policies toward Native American clients. A change in policy was made which introduced more standard banking practices and reduced the availability of loans to Native Americans who interpreted the change as discrimination. The Indians do, however, have a direct link to the bank since a member of the Northern Cheyenne tribe always sits on the board of directors.

In terms of social stratification, Ashland is more horizontally than vertically organized. This is because there are numerous social groupings in Ashland but none that claim or are given any extraordinary social esteem. In addition, there is little interaction between the various social groups. These characteristics have contributed to a notable fragmentation in community processes.

VI. Summary of Major Findings: Ashland, Rosebud County, Montana

Through the study period, Ashland has not changed to any substantial degree, even though Rosebud County has undergone some extensive changes caused by the impacts of energy development. There are several reasons for this.

First, Ashland is geographically isolated from the rest of the county. The distances are too far for commuting, the roads are not very good, and the routes are somewhat roundabout.

A second reason why Ashland has not been affected by development in Rosebud County is that Ashland really offers no attractive features that would lure new residents. In particular, there are no medical facilities, housing, recreation opportunities, or shopping.

These are the primary reasons why Ashland has not yet been affected by the development that is occurring in Rosebud County. Indeed, Ashland will probably change only when development occurs in the immediate area so that Ashland is the only logical place to live.

Chapter Three

Outside Linkages (Extra-Local Linkage)

3.1 Introduction

Linkages are the process by which resources flow between the community and the larger society. Because this happens in so many ways in rapid growth towns, the study teams examined social, economic, and political linkages. These areas, of course, are not exclusive, but analytically it made the task manageable.

The contrast in the study towns before and after development occurred is notable. Many were very isolated from the rest of the nation; linkages that did exist were primarily intra-state through the schools, 4-H programs, and state associations. This isolation partially accounted for the low rates of social disruption (crime, divorce, etc.) present in these towns prior to development. Examining linkages reveals how much the social organization of these towns has changed, and particularly emphasizes the importance of changes in political linkages.

3.2 Pre-Impact Conditions

There was considerable variation among the study communities prior to impact. Table 3-1 summarizes the pre-impact conditions in the ten study communities.

3.2.1 Low Pre-Impact Extra-Local Linkages

Four communities exhibited generally low levels of extra-local

Table 3-1: Pre-Impact Conditions: Extent of Outside Linkages

Community	Economic	Political	Social	Aggregate
Craig, CO	Low	Low	Low	Low
Rangely, CO	Moderate	Moderate	Moderate	Moderate
Ashland, MT	Moderate	Moderate	Low	Moderate
Forsyth, MT	Moderate	Low	Low to moderate	Moderate
Grants, NM	High	Moderate to high	High	High
Washburn, ND	Low	Moderate	Low	Low
Price, UT	High	High	Moderate to high	High
Salina, UT	Low	Moderate	Moderate	Moderate
Douglas, WY	Low	Moderate	Low	Low
Wheatland, WY	Low	Low	Low	Low

linkage prior to the impact period.

Craig, Washburn, Douglas, and Wheatland were generally isolated, rural communities prior to impact with extra-local economic linkages concentrated in the agricultural sector. All of these communities were agriculturally based prior to impact, and none served as a regional economic center. Douglas and Washburn, however, did have effective and well-established political linkages with the state as a result of initiatives made by both state and local officials. These state linkages proved important for obtaining monetary resources and political support during the impact period.

3.2.2 Moderate Pre-Impact Extra-Local Linkages

An additional four communities were rated moderate in extra-local linkages prior to impact: Rangely. Ashland, Forsyth, and Salina.

Rangely's greater level of extra-local linkage was primarily a result of the presence of oil and gas companies and related workers. Few of the linkages created by these companies and workers had a community orientation - they merely reflected that companies and residents with limited ties to the community were present.

In Ashland, the presence of a Native American population, with ties to the BIA and Native American organizations, and a mission tied to a national church organization made extra-local linkages extensive compared to the size of the community. The linkages tended to be intense but concentrated within a limited number of outside organizations. The same was generally true of Salina where the powerful political and social ties of the Mormon Church drew Salina firmly into a dense network of relationships.

Forsyth demonstrated less intense but more diverse linkages. The community did not have extensive links to state government, but the presence of the railroads created a different potential for outside linkages. The linkages created by the railroads, however, were not extensively used by the community or by the railroads.

3.2.3 High Pre-Impact Extra-Local Linkages

Price and Grants, the two communities with the largest and most differentiated economies prior to impact, exhibited the widest range of linkages as well as the greatest sophistication in their use. An important difference between the linkages of Price and Grants and those of Ashland was their accessibility for community-oriented actions. Grants' strong link to powerful state government officials was extremely important in the course of impact in the community.

3.3 Changes in Extra-Local Linkages

The contrast in some of the study communities before and after development was stark. In others, the change was less dramatic and pervasive. Some of the smaller, more isolated communities in the study had been significantly insulated from the national social and political turmoil of the 1960's. In-migration of residents from less-isolated areas thus served as a potentially potent conduit for national trends. Changes were identified in all three aspects of extra-local linkage. As shown in Table 3-2, changes in political linkage were found to be particularly notable and significant.

3.3.1 Political Linkages

We interpreted political linkages primarily as connections between formal organizations - public and private - at the local, state, and national levels. In cases where development was large enough to require significant mitigation measures (Craig, Forsyth, Grants, Washburn, Price, Douglas, Wheatland), increases in political linkages were extensive. Simply put, local people and state officials recognized that they had to develop connections with certain organizations, and in the majority of cases they had the resources to make these connections.

Most federal linkages were to federal granting and permitting agencies - HUD, HEW, DOE, FmHA, BLM, USDA, Forest Service - and to state congressional offices. State connections were to state planning offices, impact assistance agencies, offices of the state's attorney general, siting councils, and environmental quality agencies. Many of these offices were only created in the 1970's, some of them specifically to manage energy development.

Connections between local communities, both inter- and intra-state, increased exponentially. The inter-connections between political office holders and agency directors of the impact towns was high. The people of Wheatland and Beulah visited back and forth. Residents and leaders of Wheatland and Douglas traveled to Gillette and Rock Springs to garner first-hand information and to learn from

Table 3-2. Changes in Outside Linkages in Ten Communities, 1970-1980

Community	Economic	Social	Political	Aggregate
Craig, CO	High	High	High	High
Rangely, CO	Low	Low	High	Moderate
Wheatland, WY	High	High	High	High
Douglas, WY	Moderate	Moderate to high	High	Moderate to high
Price, UT	Low	Moderate	Moderate	Moderate
Salina, UT	Low	Low	Low	Low
Washburn, ND	Moderate	Low to moderate	Moderate	Moderate
Grants, NM	Low to Moderate	Low to moderate	Moderate	Moderate
Forsyth, MT	Moderate	Low to moderate	Moderate	Moderate
Ashland, MT	Low	Low	Moderate	Low

those experiences. Residents in all the study communities should be given credit for the resourcefulness and self-reliance they exhibited. Many service providers (city managers, welfare directors, planning commission members) stressed that they didn't rely on the company people, the "feds", or state officials to learn what to do; they accepted their responsibility for acquiring the information they needed to be effective leaders. The linkages (and friendships and alliances) among people in Craig, Rock Springs, Gillette, Douglas, Wheatland, and Washburn became extensive, certainly more so than any time in the region's history.

Increased linkages meant that small-town people in neglected rural areas of the country suddenly found they had access to state and national offices, both public and private. This access occurred because by the mid-70's, after Rock Springs and Gillette had made national news, many people recognized that too much social disruption could slow down the process through which national resources are acquired. Obtaining resources needed for mitigation became important to state and national figures and to corporate managers. Leaders from the study communities went to Washington and even to the White House. Some corporate leaders came to the towns, but primarily because the siting laws often made it imperative that an official high enough to set corporate policy be present for hearings and negotiations with state and local leaders.

Corporate resources were often used to develop and facilitate these linkages. Leaders from Douglas went to Tennessee to assure the Synthetic Fuel Corporation that their town wanted a synthetic fuel plant and could manage the socioeconomic impacts. Leaders from Craig and Rangely went to Denver and Washington, D.C. to negotiate with federal and state agencies.

Development of political linkages was an important community resource achieved through a learning process. Corporate managers and their ever-present consultants coached locals on how to compete for resources, how to connect with large bureaucratic agencies, and how to present their needs. In turn, local leaders guided managers in how to comply with local regulations and local customs.

In a sense, an element of rural America lost its bloom of innocence. Citizens, who prior to this had seen only media images, came in contact with industrial America and the federal-state bureaucracies. Regardless of how this loss of innocence is evaluated, it represents a further integration of otherwise isolated communities into the realities of the nation.

An important question is what do these new political linkages mean for the future of these communities. None of the towns studied were far enough beyond their initial growth period to know how these linkages can be used, or if they will continue to be cultivated and applied. The linkages may disappear over a short period of time (2 to 5 years), because once construction of a project is complete, the incentive for cooperation and interaction between local officials and company authorities is gone.

3.3.2 Economic Linkages

Changes in economic linkages occurred primarily in three major areas: changes in non-local job opportunities; changes in the private local business sector; and changes in financial institutions.

Job Linkages. The increased non-local job linkage was an important change which had not been anticipated. In the towns where growth was strong, a number of local people left to take positions with energy companies or with state or local agencies in professional, business, and management positions. Through contacts initiated by the development, local people (primarily people just beginning their careers) learned of new job opportunities, and company and government people found new talent. Local people were hired to work in company headquarters in Seattle, Portland, Houston, Denver, Dallas, and in government centers in Washington, D.C., Helena, Bismarck, Denver, Salt Lake, and Santa Fe. Such job movement provided useful linkages, giving local people contacts with "old friends" in organizational spheres previously out of reach. We observed that much useful information passed through these channels, and frequently the communication between external actors and locals was improved through these links.

Business Sector Changes. Where the growth was largest -- Craig, Wheatland, Douglas, Grants -- nationally owned chain stores and franchise businesses came in and aroused mixed reactions. Many consumers stated they liked the chain outfits. The availability of goods and services was improved, and prices were often lower. But the effect on local businesses was sometimes negative, and the effect on the local economy may ultimately be negative for these towns. Chain stores, particularly the large food and merchandise discount stores, probably did hurt some locally owned businesses. Other locally owned stores expanded in order to compete. As growth has dropped off, some of these owners fear they can't survive; many are unable to capture enough of the market share to get by, especially if they had incurred much debt to expand. Many business owners in these towns, however, welcomed the boom. They had made money but were apprehensive about the future, hoping for at least some growth to continue.

Local business owners have a different and more important status in small towns than do chain store employees. The local owner is just that, he's an owner. He sinks or swims with the town. Chain store employees are often transferred, or, if the store has to close, they usually move on. Most importantly, locally owned profits remain in the local economy. The economies of such small communities are quite marginal in non-boom periods. Once the growth has leveled off, the presence of several large chain stores may have a net negative effect on the local economy.

The problem of uncertainty for small businessmen was seen by many respondents as a major problem. The effects of uncertainty influence many components of social organization and impact mitigation.

The private sector did not expand quickly enough anywhere growth was large - Craig, Wheatland, Douglas - and will be a problem if growth expands in Rangely and Ashland. Most small-town businesses are financially fragile: if merchants borrow to expand and the growth doesn't occur or doesn't come quickly enough, owners can lose their livelihood. If these businessmen don't expand, they run the risk of being forced out by new, financially stronger competition, i.e. chain stores. They also get accused of not responding to local needs. If the businessman fortuitously implements his expansion correctly, he inevitably has to raise prices to cover increased labor costs and the capital costs of expansion. Entrepreneurs who expand may get caught in the "bust" when growth declines - this appears to be happening in Wheatland and Craig particularly.

How well the business community responds is, in part, determined by the structural problems just described, but is also affected by the level of cooperation in the community prior to development. If coordination and cooperation are good, businessmen will receive better help and at least better understanding from other local groups. If there is conflict, businessmen may receive less information and help from others and may respond negatively, creating a split in the community which hinders management and coordination. The latter appears to have occurred in Craig to some degree and appears to be a likely outcome in Rangely and Ashland.

Uncertainty was repeatedly described as one of the toughest problems in managing growth. Developers often aren't sure if these projects will be built. By the time they are sure, it's often too late to plan effectively. If tentative plans are revealed, some groups jump in and make investments, and then blame the developer if the project doesn't go. Sometimes, when a company knows a project is going ahead, they can't convince local leaders or other local groups until the lead time has been lost and growth is upon them. Everywhere we interviewed, the problem of uncertainty was stressed.

Financial Institutions. The change in number, type, and ownership of financial institutions was significant in Craig, Rangely, Douglas, and Price. In Craig, a new bank, a savings and loan company, and a financial services office opened. In Rangely, the one locally owned bank was purchased by non-local investors. In Douglas, a new bank and a new savings and loan company were founded. In Price the two financial institutions were purchased by external interests. In every case, the customs and rules of the institutions changed. It is difficult to capture the full meaning of these changes. Some residents resented the changes in practices, while others felt they had become more fair. In general, rules and practices became more formalized and, therefore, probably more equitable. New procedures were established by the outside holding companies and, consequently, the actions of the local institutions became more impersonal.

The effect of external ownership is difficult to evaluate in the short-run. In most instances, it did appear that more total capital was being made available for local uses, if borrowers could qualify and could afford the interest charges. However, it is too early to discern what the long-run effects of these changes in ownership may be.

3.3.3 Social Linkages

The nature, extent, and effect of increased social linkages were more difficult to determine, but social linkages did expand in almost every case. Religious participation was clearly important to many newcomers and new religious denominations appeared in the larger growth towns. In Craig, Rangely, and Price, some persons attached to religious groups were commuting out of the area to attend churches of their faith.

New social and recreational activities were introduced by new people with different lifestyles and higher incomes. People bring with them their beliefs and social interests. If outlets for these are not available, they often turn to the organizations they left behind for assistance in establishing a similar organization in their new community. Examples of this, in addition to new churches, were snowmobile and four-wheel drive clubs, natural childbirth groups, day care organizations, and political interest groups (posse commatades, energy conservation groups, and wilderness advocates).

3.4 Importance of Pre-Impact Conditions

Extra-local linkages appeared to be relatively elastic: communities exhibited an ability to establish new linkages relatively quickly. Nevertheless, the presence of well-established linkages that were consistently utilized gave come communities a head start on this critical process.

The experience of the study communities illustrated the two-way nature of extra-local linkages and the importance of considering outside intervention (by the state, the federal government, and/or the companies) when forecasting social outcomes. When the magnitude of the problem was recognized by the state governments in the study region, strong and generally innovative legislation was passed to provide assistance to the communities. In general, utilization of these mechanisms was the result of simultaneous initiatives by the local community and the state (and sometimes the federal government).

For these reasons, the pre-impact characteristics are important for anticipating how a community can respond and for estimating the extent of the differences likely to occur between pre-impact and post-impact conditions.

3.5 Meaning of Change

Because of the dual nature of outside linkages - providing access to resources vs. the imposition of outside control - the meaning of increases in extra-local linkages is difficult to generalize.

Changes in linkage result from change in the composition of the local economy and population as well as from more complex interactions within the community. Residents and leaders in communities facing a decline in resource-based activities and the loss of extra-local linkages considered such decline almost as problematic as the earlier growth had been. Although few community residents were found to view the passage of the very rapid growth period with regret, many expressed concern over the decline or cessation of established levels of activity.

Chapter Four

Diversity and Complexity (Differentiation)

4.1 Introduction

Growth increases the diversity and complexity of communities by expanding the range of social roles, values, and interests present in the community. A less diverse community is one characterized by homogeneity where members share similar qualities such as ethnic, religious, and cultural characteristics; it is a community with relatively little diversity in its occupational structure, its business community, and the structure of its local government. Empirical research on diversity suggests numerous ways in which it might be generally increased by energy development (Literature Review, Thompson and Branch, 1981).

Change takes place in energy growth towns specifically as new organizations and new roles are created to meet new needs and interests, usually the result of people with more diverse or different backgrounds moving into a community. The needs occasioned by larger and denser populations stimulate differentiation. Technological innovations and increasingly sophisticated technological systems also cause differentiation.

As defined for this project, diversity and outside linkages are closely related, but they measure different aspects of community social organization. It is possible, for instance, for outside linkages to expand without creating increased diversity. For example, if changes in the national and international agricultural markets occurred and changes in federal policies relating to agriculture were instituted, it is probable that linkages between existing agricultural groups in the region would increase without necessarily creating new roles and interests in local communities. But the establishment of a new economic base such as energy development increases linkages as well as creating more diversity through new positions, groups, and interests related to the new activities.

4.2 Pre-Impact Conditions

The pre-impact characteristics of the ten study communities in terms of economic, political, social, and aggregate diversity are summarized in Table 4-1.

4.2.1 Low Diversity

As seen in this table, five of the communities (Craig, Washburn, Salina, Douglas, and Wheatland) were considered to be relatively undifferentiated just prior to the impact period. These communities were economically dependent on one or two industrial sectors, usually agriculture, though resource extraction also played a role in some. Since several were county seats, the geographic concurrence of county and town governmental activities tended to increase the political diversity and differentiation observed, although most had not developed complex or formal administrative structures.

All five communities were also classified as low on social differentiation, meaning that none had a substantial minority population, although some, like Douglas, did have a few Hispanics. In

Table 4-1 Pre-Impact Conditions of Diversity and Complexity in Ten Communities

Community	Political	Economic	Social	Aggregate
Craig, CO	Low	Low	Low	Low
Rangely, CO	Low	Moderate	Moderate	Moderate
Ashland, MT	Low to moderate	Moderate	Moderate	Moderate
Forsyth, MT	Low to moderate	Moderate	Moderate	Moderate
Grants, NM	High	Moderate	High	High
Washburn, ND	Low	Low	Low	Low
Price, UT	High	Moderate	High	High
Salina, UT	Low	Low	Low	Low
Douglas, WY	Low	Moderate	Low	Low
Wheatland, WY	Low	Low	Low	Low

all five communities, residents distinguished between ranchers and farmers and townspeople but viewed the community as known and named individuals rather than as a collection of groups.

4.2.2 Moderate Diversity

Three of the study communities were evaluated as relatively diverse: Rangely, Ashland, and Forsyth. This group showed greater variability among elements than those considered low in diversity, reflecting the fact that the source of differentiation varied among the three. Economically, the town of Rangely was very isolated, supporting only a limited variety of business establishments. But the presence of oil and gas activity in the area and the agricultural base made its economy more diversified than rural communities which were solely dependent on agriculture. The number and types of workers also created social diversity.

Ashland, also geographically isolated, had a limited commercial and service sector. The presence, however, of a mission school, a federal agency, and a sawmill expanded its economic base beyond agriculture. Transfer payments to the Northern Cheyenne Indians whose reservation boundary is adjacent to Ashland also diminished its dependence on agriculture. Political differentiation in Ashland was low, and the community took very few administrative actions. Social differentiation in Ashland was moderate to high and was perhaps best characterized as fragmented. Residents perceived numerous, separate groups in the community and common interests were few.

Forsyth was less isolated. As a county seat located along a major interstate highway and the distribution point for two railroads, the economy of Forsyth was somewhat diversified. The center for both town and county government, Forsyth had developed formal administrative structures and, because of its more diverse economic base, its residents represented a more diverse political perspective. For these same reasons, the community was also moderately diversified socially. Agricultural interests, though important, did not dominate Forsyth.

4.2.3 High Diversity

Two communities were categorized as highly diversified compared to the sample as a whole. This was, in part, because they were more diversified at the outset. Grants, New Mexico, founded as a railroad and commercial center, to service such diverse activities as mining, ranching, truck farming, and logging, was located on a major highway and supported a modest tourist industry. Located in the midst of Spanish land grants, Indian reservations, and federal lands, Grants exhibited the most complex and sophisticated political structure of the study communities. This was true even though it did not become a county seat until 1981. The community included large populations of both Hispanics and Anglos and had contacts with several Native American groups. Consequently, it was diverse both socially and culturally.

The other community in this category was Price, Utah. The economy of Price was moderately diverse, although the dominance of the mining industry muted its diversity. Like Grants, however, Price exhibited a relatively high degree of political and social differentiation. In Price, this was primarily the result of in-migration of ethnic groups to work in the area's coal mines. The interaction of traditional, Mormon characteristics with the diverse traditions of European and Spanish workers made Price a uniquely pluralistic community.

4.3 Change in Diversity and Complexity

In all communities except Ashland, the greatest source of change was energy development. None of the communities hosted other types of large industrial projects. National political and social conditions, however, were changing rapidly during the 1970's, and these changes undoubtedly affected the communities in the study region. For this reason, we are cautious about quantifying the relationship between energy development and the changes observed in the study communities. Nevertheless, the lack of change observed in communities which received few project inputs - Ashland, Salina, and Forsyth (during the second phase of energy development) - indicate that without the substantial impetus of energy development, the communities in the study would probably have undergone only modest change.

The changes in level of diversity and complexity observed in the study communities are summarized in Table 4-2. As the table indicates, changes in diversity were greatest in communities where pre-project diversity was low and project inputs were high, and least in communities where pre-project diversity was high and project inputs

Table 4-2 Change in Diversity in Ten Communities, 1970-1980

Community	Political	Economic	Social	Aggregate
Craig, CO	High	High	High	High
Rangely, CO	Moderate	Low to moderate	Low	Low to moderate
Ashland, MT	Low	Low	Low	Low
Forsyth, MT	Moderate	Moderate to low	Moderate to low	Moderate to low
Grants, NM	Moderate	Moderate	Low	Moderate
Washburn, ND	Moderate	Moderate	Moderate	Moderate
Price, UT	Moderate	Moderate	Moderate	Moderate
Salina, UT	Low	Moderate	Low	Low
Douglas, WY	High	High	Moderate	High
Wheatland, WY	High	Moderate	Moderate	Moderate

were moderate or low. It should be noted that since the changes being discussed are changes in "degree" of differentiation, they are sensitive to the pre-project condition. That is, new organizations or people added to a community that was previously low in diversity would cause greater change than would the same number added to a highly differentiated community.

4.3.1 Low Change

Four communities experienced only a low to moderate change in differentiation over the study period: Rangely, Salina, Forsyth, and Ashland. Change in Rangely was low to moderate because the new developments, which had been anticipated throughout the study period, had only begun to be implemented. Greater changes are anticipated in the future. In Salina, changes were limited despite the community's relative sensitivity to change. This was primarily because of the nature and magnitude of the development activity. The expansion of underground coal mining did not introduce a wholly new industry, and it did not result in large, fluctuating demands for labor. Of great significance was the extent to which the new positions were filled by area residents and former residents. This minimized the amount of differentiation that existed in residents' historical experience/background and prevented much change from occurring in cultural and religious differentiation.

Forsyth experienced a wave pattern in differentiation with the greatest diversity present during the mid 1970's when Colstrip Units 1 and 2 were under construction. As Colstrip was expanded to accommodate a higher proportion of the in-migrants and construction of Units 3 and 4 was delayed, economic and social differentiation decreased while political differentiation continued to increase slowly. By the end of the study, economic and social differentiation in Forsyth had returned almost to pre-project levels.

In Ashland, anticipated project inputs did not materialize. Ashland was affected little by construction of the Colstrip generating facility, despite its relative proximity, and the coal mining forecast for the Ashland area was continually delayed. Consequently, Ashland experienced no increase in economic differentiation and a only a slight increase in political differentiation, while remaining moderately differentiated socially.

4.3.2 Moderate Change

An additional four communities experienced moderate change in differentiation. Wheatland followed a pattern somewhat similar to Forsyth. During the peak construction period, economic and social differentiation increased substantially as support services and a large new population entered the previously undifferentiated community. By the time of the study, however, the construction phase had been completed; many of the residents and businesses dependent upon the expanded market created by the construction activity had left, reducing both the economic and social differentiation.

The overall change in Price was moderate. To a large extent, this was because the community was already well differentiated and because its extensive experience with coal mining activities reduced the diversity created by the development of the 1970's. Conversely, however, the differentiated nature of Price prior to the impact period appears to have played a role in attracting diverse economic activities and in-migrants to the community; the diversity that occurred in Price was greater because the long-term prospects for continued growth were considered favorable.

Washburn also experienced a moderate increase in differentiation, although the magnitude of change was not great because much of the economic activity and in-migration that would have caused differentiation was captured by the Bismarck-Mandan area.

4.3.3 High Change

Two communities in the study sample underwent substantial change in differentiation characteristics. Craig, Colorado appears to have been permanently transformed from the relatively homogeneous, rural community it was prior to the study period. As with the other communities experiencing a large, temporary population influx as a result of power plant construction, diversity in some aspects of the community was greatest at the peak period of construction when population and economic activity were highest. In Craig, however, as in Price and Grants (before the bust), the anticipation of a more permanent expansion of the economic and population base resulted in a depth of change not demonstrated in the communities where residents recognized the growth was temporary. Nevertheless, differentiation was restricted by the prevalance of regional residents among the in-migrants and the correspondingly low change in overall cultural orientation. Craig's notable change in social differentiation resulted from the presence of large numbers of transient residents who clustered into relatively small and fragmented groups. Because of the sheer size of the new population, these transients remained unfamiliar to long-time Craig residents and to each other.

Douglas also underwent considerable change in differentiation during the study period. The principal differences between the growth experiences in Douglas and Craig were 1) the absence, in Douglas, of a major construction work force which caused the population to peak and 2) the diversity of the resource development activities which were contributing to community change (uranium, oil and gas, coal). The most rapid growth did not occur in Douglas until the latter part of the 1970's, allowing the community's residents and leaders to observe conditions in the communities affected by the first wave of development and prepare their response. (Although the sequence was similar in Craig, the experience of other communities seemed to have less influence there.) By this time, companies and state officials in Wyoming were more prepared to take an active role in assisting communities through providing both resources and technical assistance. The need to interact effectively with the state and the development companies hastened the political diversification that occurred in Douglas.

The diversity of resource-based activities occurring near Douglas during the study period resulted in a marked increase in the occupational diversity of the community even though its proximity to

Casper, a regional trade center, inhibited the establishment of large numbers of new businesses.

4.4 Political Diversity

As with external linkages, we examined political diversity in terms of changes in the size, number, and structure of formal administrative organizations. We also examined the formation of new political interest groups which were directly related to energy development. Changes in the number of agencies and positions within existing agencies was large in all the towns which had undergone significant increases in population. Typical changes that occurred were the addition or expansion of city/county planning offices, the formation of task forces or committees, and the addition of new positions (radio dispatchers, jailers, special law enforcement officers, truant officers, public health nurses and sanitarians, recreation directors, and day care teachers).

The other area where political change occurred was in the formation of new interest groups. In Douglas and Wheatland, political groups were formed representing constituencies concerned about specific aspects of the development. In Wheatland two new organizations, the Laramie River Conservation Council (LRCC) and the Goshen/Platte Protection Association (GPPA), were formed. The LRCC was originally created in reaction to water issues related to the acquisition and transfer of water for use by the power plant. This group was composed of agricultural people concerned that the long-term effects would be to reduce the availability of water, decreasing the viability of agriculture in the region. Once formed, the LRCC became the chief adversary group to the power plant and was joined by formal environmental groups including the Wyoming Outdoor Council and the Sierra Club. In Douglas, the Powder River Basin Resource Council was actively concerned about these same issues related to the uranium industry, coal mining, and oil and gas exploration and development in Douglas and Converse County. The primary focus of the GPPA in Platte County was the siting and building of power transmission lines from the power plant to the power grid in Nebraska. The GPPA was not as formidable an adversary as the Laramie River Conservation Council, confining itself to representing agricultural constituents in the siting of transmission lines.

Various interest groups were formed in the impact areas including child and spouse abuse refuge centers, conservation organizations, and environmental protection groups.

Most political differentiation took place in these two areas -- increases in formal organizations and the formation of specific interest groups. Obviously such organizational changes alter many aspects of local social organization. Service agencies are more strongly represented in the community and are more influential with existing political leaders. The addition of new political interest groups expressing a variety of positions and opinions changes the interaction processes considerably in a small community. The process of integrating different interests and groups into these communities is made more complex; there is an adjustment period while the manner in which groups are coordinated with one another goes through a process of change and adaptation.

While important new offices were created at both city and county levels, the locus of elective power in both arenas changed very little. The major changes in both city and county functions were in increased specialization and professionalism of appointed administrative activities. Elected officials were predominately long-time residents from the same social status as they had been historically. We emphasize this because, when growth reaches a certain size, evidence from other regions in the country indicates that structural changes in these governing bodies could and probably will take place.

4.5 Economic Diversity

Economic change occurred in two specific areas, one which appears to have a positive outcome, the other a possible negative outcome. The positive change is the increase in occupational differentiation represented by the addition of the permanent operating work forces of the larger energy projects. Power plants typically employ a number of senior engineers and electronic and mechanical technicians, occupations that were not formerly represented in these communities. Also, large plants usually have their own accountants or controllers and often require additional services from local professionals such as accounting firms, legal firms, and insurance agencies. The latter professional services are also used by mining operations and thus bolster the demand for these services in the study communities. The increases in these latter occupational areas were significant in Craig, Grants, Wheatland, and Douglas and, to a lesser extent, in Washburn.

Increases in economic diversity in the private goods and services sector of the local economies did not appear as large as was expected and is having a number of problematic outcomes. In Craig, Wheatland, Price, and Washburn, the large influx of construction workers created a high demand for certain types of goods and services for a relatively short period of time. The short duration of this demand created a number of problems in these communities. The high demand during the construction period caused an increase in businesses which are now experiencing financial difficulty. In fact, several of these businesses have already taken bankruptcy in Craig and Wheatland. Examples of new businesses are specialty clothing stores, electronic stores, mobile home sales and services, and auto dealerships carrying 4-wheel drive vehicles and vans. It is hard to distinguish the influence of the decline after the construction period, however, because it coincided with the decline in the national economy, and a number of local respondents indicated some new businesses probably should not have been established and would have had financial problems anyway because they were started by people with insufficient experience.

Diversity in the established businesses in the private sector did not appear to be large. Where the permanent population increase was substantial, as in Douglas, Craig, and Wheatland, there was an expansion of existing types of businesses, i.e., new bars and new restaurants were formed, and/or existing establishments were able to expand their operations. For the most part, these additions or expansions appeared to be doing well. But they do not necessarily represent an increase in diversity of economic interest. We were unable to identify any new businesses which had been totally unrepresented in these communities prior to development. In summary, the only new businesses which we observed in the area were in small specialized areas such as electronics, clothing, or specialty foods, such as fast food franchises. There was a strong possibility that most of these would not survive more than three to five years after the growth from the developments had leveled off.

4.6 Social Diversity

Changes in social diversity can be summarized in terms of three main categories: changes in the age structure of the population, increased formalization in social interaction, and changes in leisure time and recreational behaviors.

A strong demographic effect in all of the study communities has been the creation of a younger population. The decrease in the median age of these populations has occurred in two ways: the decreased out-migration of young people from the local population and the in-migration of a considerably younger population, for both the construction and permanent operation phases. The lifestyles and leisure activities of these younger age groups differs in important ways from the lifestyles of older residents. For example, there is a greater emphasis on outdoor activities using 4-wheel drive vehicles, campers and trailers. There are also increased activities in almost all areas related to school age children, resulting in increases in play schools, day care centers, and activities for non-adults. Many of the in-migrating families bring with them new ideas concerning children, such as swimming classes for pre-school children, increases in natural child birth training classes, and classes on the care and nutrition of young infants. The increase in the younger population also appears to have the general effect of increasing the energy and interest in community activities. Thus the enthusiasm and hope which is always expressed by the youth of any social group appears to be on the increase.

Another change noted in the literature on social impacts was increased formalization of social interaction. In a general sense, the process of formalization can be described as a change from using particularistic criteria in carrying out a variety of personal interactions to the use of more universalistic criteria. An example is the administration of justice whereby criteria for who gets arrested changes from consideration of "who you are" to "what you did". In the business sector, the most often mentioned example was requiring formal identification for check cashing. Changes in criteria were also evident in financial institutions; criteria for loans in many communities have moved significantly from "who you are" or "who you know" to emphasis on physical collateral and ability to repay.

The formalization of relationships is pervasive throughout the country, however, and cannot be attributed to energy growth alone.

Nevertheless, there were strong indications that these processes were being accelerated by energy-related growth. This change to increased formalization was at first viewed negatively by a majority of oldtimers. But a number of local residents realized that, once formalization procedures had been instituted, the results were often greater equity and efficiency. An example given was the enforcement of land use planning and zoning regulations. In the early stages of development in several communities, many oldtimers received preferential treatment making it difficult to enforce new rules and regulations and resulting in disorderly growth. With new, professional administrators, the influence of some oldtimer groups diminished, and criteria were enforced on a more universalistic basis. While this does not please everyone, it appears at least some residents, old and new, appreciate the increases in efficiency and equity which occur from the use of universalistic criteria versus particularistic criteria.

The third area of social change was in recreation and leisure-time activities. The increase in size of populations as well as new interests of in-migrating residents resulted in new social activities. For example, local community theaters have emerged in Craig, Douglas, and Wheatland, where amateur acting groups have been formed and have put on theatrical productions. Many of the new employees have both the time and the income to engage in specialized hobbies; model railroad building, pottery making, and a variety of other hobbies have resulted in the establishment of hobby shops. Also, a virtual explosion in demand for recreational activities occurred in many of the towns, especially participation in basketball, softball, and racquetball leagues and tournaments. In the towns where recreation centers were built, the use of basketball and racquetball courts has been exceedingly high. Recreation directors for these facilities indicate they simply had no idea of the demand that existed and still don't know the level of demand since the current facilities are constantly full.

Chapter Five

Distribution of Resources, Status, and Power (Stratification)

5.1 Introduction

The stratification system of a community - the process by which resources, status, and power are distributed among community residents - is an important determinant in the effects of any kind of development. As with diversity and outside linkages, the various components of stratification are affected unequally by change. Despite the uneven, and usually slow, changes in stratification within a community, changes do occur and they begin as soon as new people and resources enter.

Two aspects of stratification were found most pertinent to assessment of the social impact of large-scale energy development activities: overall system complexity and historical stability and flexibility of the criteria for distribution of power, status, and resources.

5.2 Pre-Impact Conditions

The historical stability and complexity of the community had implications for the stratification system prior to impact. Whether residents expected change or stability in the structures and processes of community life was an important factor in adapting to energy-related change. Also important was the relative flexibility and openness of the system.

Understanding the stratification system is important for assessing the ability of a community to respond, since the coincidence of political, economic, and social interests influences positions taken by key community actors and associations. The stratification system that prevails when a project is initiated influences the course of change over the entire impact period. Diverse patterns were present in the ten study communities prior to impact, although none of the communities had experienced radical change in stratification in the recent past.

5.2.1 Low Complexity

Five communities (Craig, Washburn, Salina, Douglas, and Wheatland) were identified as having relatively simple systems of stratification. In all five communities, stability of the criteria for stratification was high, with little change observed during the recent past. A noticeable feature was the persistence of a stratification system evolved during the initial settlement period and based on the economic dominance of agriculture.

Washburn, an agricultural community located within commuting distance of Bismarck-Mandan, was relatively homogeneous, with a stable stratification system. This was consistent with the community's low level of diversity and limited outside linkages.

Pre-impact Craig showed a pattern similar to that of Washburn, although the presence of a ranching base rather than farming and its proximity to Steamboat Springs somewhat increased the complexity of stratification.

Salina, dominated by the Mormon religion, exhibited a more complex stratification system as a result of interaction between ranching and religious criteria. Douglas and Wheatland were similar in pre-impact characteristics, but because of some prior development in the 1950's and 1960's, Douglas had a slightly more complex system of stratification.

In all five of these communities, the simplicity and historical stability of stratification had affected residents' definitions of community organization and lifestyle. As discussed below, this increased the emotional anticipation of change.

5.2.2 Moderate Complexity

Two communities were considered to have pre-impact stratification systems of moderate complexity: Rangely and Forsyth. In both of these communities, the economic and social base of the community was more diverse, and a part of the population was not permanent residents. The introduction of more diverse occupational characteristics, values, and interests was increasing in Rangely as a result of oil and gas development. The presence of large corporations, oil and gas workers, ranchers, and service sector interests increased the complexity of power and access to resources. These changes had occurred earlier in Forsyth, resulting in the community having a more stable stratification system than was evident in Rangely.

5.2.3 High Complexity

Three communities ranked high in complexity of their stratification systems prior to impact: Ashland, Grants, and Price. All three contained multi-ethnic populations and generally exhibited less long-term stability in the stratification system. In Ashland, the distribution of power was only moderately complex because of the fragmented nature of the community and and because its lack of political positions limited the magnitude of available power. Status differentials, however, were marked. Access to resources varied less dramatically, in part because of the limited pool of resources available in the community and because of the absence of large wage differences.

In Grants, the elaborate political system and historical development of the community contributed to large differentials in power and status. Status awareness was very high, although the criteria for status awareness were complex. Because of the diversified economy and complex cultures, the variance in distribution of resources was moderate to high. The multi-ethnic nature of the community population created increased demands on public service agencies in order to make services accessible to all groups.

In Price, the long-term interaction of the various ethnic groups had been facilitated by a common occupation - mining - with the result that extreme differences in power, status, or access to resources were avoided.

Locus of Power. An important issue in understanding the response of a community to an energy development project, and hence to its final outcome, is the locus of power and influence in the community. Power over public resources constitutes an important factor in community response.

The case studies reveal different patterns in the distribution of power over public resources. In the small, agriculturally based towns, this power tended to be divided among two, relatively small sets of community leaders: those representing the town and those representing the county. Although the criteria for status and power was similar for both groups (land or property holdings and family lineage), the dominant basis of livelihood, commerce vs. agriculture, was different. This, combined with the different problems, issues, and responsibilities facing town and county leaders, often caused these two groups to be at odds concerning development issues. The importance of this fact was demonstrated in the case studies of Douglas, Wheatland, Washburn, and Craig, the communities with the least-differentiated economic base (the most agricultural) of the ten studied.

Of the remaining communities, Rangely exhibited one of the main characteristics of the agricultural communities: a small, relatively closed power structure. However, the economic importance of oil, gas and coal development has already affected the community's vested interest in continued development and has expanded the power base to include corporate representatives. In the others (Grants, Price, Salina, Forsyth, and Ashland), the agricultural interests of the county were tempered by the diversity of economic interests: mining, railroads, Indian reservations, and missions, for example. This tended to lower differences between town and county perspectives and to broaden representation with both governmental bodies. The strong and integrative force of the Mormon Church also influenced the stratification pattern and locus of power in Price and Salina.

5.3 Changes in Stratification

How resources and power are distributed in a small community is important for several reasons: how power is used in a community affects how new development takes place; changes in distribution can affect the acceptability of development to different groups; relative equity or inequity of access to resources affects how a community manages development and whether such equity is increased or decreased.

We recognize that the distribution of resources and power, or stratification, is a complicated concept, hard to measure and having numerous social effects. But the research revealed that certain aspects of stratification are definitely related to development effects. The elements we found most important are those summarized in Table 5-1.

Changes in the Complexity of the System

The case studies reveal that power over public resources in many western communities tends to be concentrated among relatively few local leaders. In general, if the community is primarily an agricultural community, control over local resources is usually dominated by a small number of citizens whose status and power are primarily based on land holdings and family lineage. Of the ten case

Table 5-1 Changes in the Distribution of Resources and Power in the Ten Study Communities, 1970-1980

Community	Change in Complexity of the System	Change in Political Power	Change in Political Ability	Increase in Access to Resources
Craig, CO	High	Moderate to low	Moderate	High
Rangely, CO	Low to moderate	Moderate to low	Moderate to high	Low to moderate
Ashland, MT	Low	Moderate	Low	Low
Forsyth, MT	Moderate	Moderate	Low	Low
Washburn, ND	Low to moderate	Moderate	Moderate	Moderate
Grants, NM	Low	Moderate	Low	Low
Price, UT	Low	Low	Low	Moderate
Salina, UT	Low to moderate	Low	Low	Moderate
Douglas, WY	Moderate	Moderate	Moderate to high	Moderate
Wheatland, WY	Moderate	Moderate	Moderate to high	High

studies, seven fit this description. The three exceptions were Grants, Price, and Salina. These three had mixed economies: both agriculture and mining were part of their historical economic base. Further, Price and Salina were influenced by the strong presence of the Mormon Church. Obviously, stratification in communities with a majority Mormon population differs greatly from other western communities, especially in terms of distribution of resources and criteria for status and holding of power.

The presence of a small, dominant elite in a small community, in contrast to a more pluralistic system where more groups share power and control of resources, has several important implications for energy development. First, if the development is very large, this system of stratification may change considerably. As Table 5-1 indicates, the change was moderate to high in five of the seven predominantly agricultural communities. The only reason change wasn't high in Forsyth and Ashland is that the level of development there was relatively low. (The presence of a company town, Colstrip, altered the social effects in these two areas.)

When the threat of change is high for the members at the top of a local social system, they may react in various ways. If they don't want development to occur, they can be very effective in opposing it; they may, in fact, succeed in "keeping things the way they are". If they oppose development but fail to stop it, the result may be strong community conflict, a decrease in community integration, and a lack of adequate mitigation efforts. If a majority of local elites support development or at least resign themselves to it, they can be very influential in determining how development occurs. The events in Rangely, Colorado are a good example of this; several old-time ranchers and public office holders organized their efforts and were able to negotiate a very beneficial mitigation settlement with the developer.

Understanding the stratification system does not mean the results can be directly predicted. Rather, the analysis proceeds like a "decision tree". If power is closely held, it is important to know whether leaders oppose or support development and under what conditions. In either case, if these leaders take action to express their position, the permitting process (granting or denial) will be influenced to some degree, and any impact assessment should make this clear.

Changes in Power Available to Local Communities

Local leaders obviously cannot affect development unless they have the power to do so. The power of local leaders (state, county, and municipal) increased dramatically in the 1970's in most of the energy states in three principal ways:

1. Wyoming, North Dakota, and Montana passed strong energy siting legislation in the early to mid-1970's.
2. Most of the states enacted land use legislation which could be used to manage growth in a variety of ways. Most of the legislation was not directed at energy development, but was conceived out of concern about urbanization and compliance with federal legislation.

3. Many leaders found ways to use existing power to coerce developers to cooperate in managing growth (i.e., changes in zoning, granting of easements over public lands, use of health and sanitation regulations).

In most cases, public power was not used to oppose development per se, but rather to require mitigation. (Rosebud County, Montana was a possible exception.)

In terms of whether or not local officials had sufficient power to manage growth, we found that they did in cases of mining and processing of coal and uranium but did not in cases of oil and gas exploration and extraction. Oil and gas developments, for the most part, are exempt from siting and land use laws and regulations (at least, they are not required to have local or state permits which can be denied under these laws). Thus, we found the worst negative impacts occurred in Colorado and Wyoming where local social forces were stymied in their efforts to manage the impacts from oil and gas developments (see Rangely and Douglas reports).

Generally, we found local officials had sufficient power to manage other forms of energy development if they had the will or ability to exercise the power they held. Even though Utah and Colorado did not have siting laws, state and local leaders often used a variety of state/local powers to encourage developers to cooperate with local needs.

The Exercise of Political Will

The ability of a community to act is in part determined by institutionalized power and in part by the will or ability of public figures to use the power vested in their offices. There has been much speculation about whether local leaders in small towns would be capable of meeting the challenges of growth, whether local autonomy would be reduced by national firms, and whether leaders in vertically stratified communities would sacrifice community welfare for personal gain.

As reflected in Table 5-1, we observed that the ability and will of local leaders was changing to meet the need: local leaders either exercised their power in a reasonable fashion, or they were replaced. In Craig, the city council was not fulfilling its function, and three key members were voted out. It is worth noting that such changes also occurred in Rock Springs and Gillette, Wyoming during the early growth years. (Even though these towns were not in the study sample, several team members had worked in these towns.) In both of these towns, charges of mismanagement were brought against the mayor who presided when growth began. Both mayors were replaced by reformist candidates, and mitigation and management improved immediately in both places. It is entirely possible that the problems which occurred in both of these places might not have been so severe if local officials had exercised their power more responsibly.

In other towns, it was clear that political will or ability had been subjects of concern and change. In Rangely, a new city administration had come to power on a platform which accused the old administration of conflict of interest and of not planning aggressively. In the Wyoming communities, Douglas and Wheatland, respondents indicated that a change in posture by local officials had clearly taken place. In these communities, it appeared the change was more a natural evolution than the result of group conflict. Local leadership did not change, but local groups were actively concerned and leaders cooperated in learning to use their power more efficiently. Leaders in both communities used zoning authority, the Wyoming Industrial Siting Act, and various county powers to urge developers to cooperate in mitigation efforts.

Change in Access to Resources

Access to basic resources (income, jobs, housing, facilities, and services) is both a measure of well-being in a community and a basic determinant of the stratification system.

Broad and equitable distribution of resources within a community denotes an "open" stratification system; more people and groups have access to the determinants of stratification: income, education, occupation, and wealth. In practically all the case studies, access to resources was improved for the majority in the community. A major exception may have been elderly people on fixed incomes.

In general, most respondents definitely believed they had better access to resources after development, and most objective indicators support this belief. The most noticeable improvements were in personal incomes, fuller and higher status employment, and improved public facilities, especially better health and recreation facilities. These improvements were most apparent in the towns where development had been greatest - Craig, Wheatland, Douglas, and Washburn.

Since access to resources is a measure of stratification, then the categories of "complexity" and "access to resources" in Table 5-1 should change in the same direction. For the most part, they do. There is a major discrepancy in several of the communities where increased access to resources is higher than the degree of change in the distribution of resources and power. This was because the mitigation efforts in some communities, particularly Wheatland, Price, and Salina, and the type of job opportunities brought in relatively high levels of resources. This points out that these two characteristics are interactive parts of a whole. The stratification hierarchy partially determines distribution of resources, but as development inputs change the distribution of resources, the status hierarchy must also change. It is quite evident that energy development is changing existing local stratification systems; a change in the "fabric of the community" is a major component which is being altered. The value of such changes is hard to determine, but we believe the changes were mostly an improvement in total social welfare. In most of the ten communities, equity in distribution of resources appears to be increased, but in no communities did it appear to be worse because of development.

Possible exceptions within communities were the elderly. Elderly persons on fixed incomes without real property holdings may experience real deprivation. Most of the communities had active programs to assist the elderly; Craig, Wheatland, and Douglas all had senior citizens' housing programs, and leaders were actively concerned for the elderly. Still, in some towns experiencing energy-related impacts, access to resources may be decreasing for some of the elderly. There was evidence that the increase in property taxes in Salina created a significant financial burden for people on fixed incomes.

Change in Locus of Power

As seen in Table 5-1, little change was observed in the locus of political power in any of the study communities. Grants was rated as experiencing moderate change because it gained control over county functions, largely as a result of energy development. Political control within the community, however, did not change appreciably.

It should be noted, however, that although the locus of political power did not change, the locus of administrative power changed substantially with the introduction of professional administrators and planners. This change was especially noteworthy in Douglas, where a particularly aggressive city administrator was introduced. There was a clear pattern among heavily impacted communities for elected officials (and political influentials) to bring outside professionals in to administrative positions and to give them a considerable degree of power. It should be noted, however, that administrators hold their positions at the pleasure of the political influentials, so they had relatively little personal power: their power lay in the power of their office.

The shift in the locus of economic power was more marked. Mobilization of federal rights to vast amounts of minerals under federal control introduced the pervasive presence of federal economic power. Unlike individual grazing or timber leasing decisions, which primarily affected the individual holding or desiring the lease, coal leasing affected entire communities. In a region long wary of and long affected by the federal government's actions, increased federal power over the area's resources was viewed with apprehension.

Actual development of the energy resources resulted in further changes in the locus of economic power. In small, agricultural towns like Wheatland, Douglas, Salina, Washburn, Craig, and Ashland, residents recognized that the local economy could be diversified by a combination of large-scale energy projects. This, in fact, occurred to a large extent in Douglas and Craig. It occurred to a lesser extent in Wheatland and Washburn, and was in the process of occurring in Rangely. It had already occurred in Grants and Price and was prevented from occurring in Ashland and Forsyth primarily by the creation of the new energy-based town of Colstrip.

The full ramifications of these shifts in economic power are not yet clear. It has certainly resulted in major modifications of the patterns of extra-local linkage and of the interest base of the community, but how holders of economic power will use it in the future remains uncertain, giving rise to additional anxieties for community residents.

In the least complex study communities, substantial overlap existed in the holding of political, administrative, and economic power. Although this feature gave the leaders in these communities extraordinary control over community affairs during the initial response period, as growth occurred most communities exhibited increasing separation or at least increased complexity in power holding. In part, this appeared to be the result of the sheer burden of attempting to manage responses in all areas and the recognition that additional personnel were needed. (This was the case in Douglas.) In part, however, it also appeared to be the consequence of conflicts of interest that emerged and that were either addressed by the power-holder (choosing one area and abandoning another) or by the public (demanding resolution of such conflict situations).

With the exception of changes in the distribution of resources (resulting primarily from the introduction of a large number of proportionately high-paying jobs), most changes observed in the stratification system of the study communities can best be understood in terms of increased complexity. The separation of administrative from purely political power and the introduction of professionals along with formal procedures both resulted from and contributed to the increasing complexity of the community.

The sharing of economic power among traditional holders (primarily land owners) and newcomers (both companies and well-paid workers) required an increased complexity in the ordering of participants and further specification of stratification criteria.

Changes in the distribution of resources and in the introduction of persons not sharing the same perspective on status criteria can and did result in status inconsistencies.

5.4 Analysis

Those communities that began with an agricultural base and a relatively simple stratification system experienced the most change and the greatest stress. In general, stress was greatest in communities where the town and county were clearly separated in terms of service center vs. economic base (historically) with little interaction and without a shared perspective. In these communities, impending energy development was viewed with concern by some agriculturalists.

In these communities, exemplified in the study by Craig, Washburn, Salina, Douglas, and Wheatland, the economic dominance of agriculture was diminished as other industries offered opportunities. Although at the time of the study, agricultural interests had not lost political control of any county governments, their power was shared more than in the past. If the view is taken that power is not a "zero sum game", it is possible that agricultural groups may not lose political or economic strength because of development. Greater tax revenue can relieve part of the tax burden on farmers/ranchers. Energy jobs can provide off-farm employment. And other criteria for power, i.e. status (length of residence and family lineage) may allow agriculturalists to continue to dominate county politics.

Although agriculturalists may have to share political control, this does not necessarily mean their economic and political strength is diminished. In fact, there was evidence to the contrary in the case studies. In Douglas, Salina, Rangely, and Wheatland, the adverse effect of the diminished relative power of farmers and ranchers was offset by the above-mentioned factors: opportunities for individual supplementary income, increased non-agricultural tax revenue for counties, and possible economic gain from leasing/selling agricultural land for mineral development.

In Price and Grants, where economic diversification and the establishment of vested interests in continued development by rural residents had already occurred, there was little difference in perspective between town and county residents.

Communities with less complex stratification systems also were more affected by new people with different social characteristics. Communities whose residents were unaccustomed to both complexity or change (Craig, Washburn, Salina, Douglas, and Wheatland) were most vulnerable to emotional anxieties caused by changes in the stratification system.

In none of the study communities did the concerns of the agriculturalists dominate community-wide attitudes toward development. Political and economic pressure to resist development was most severe in Forsyth, where town residents were largely in favor of development and a well-organized portion of county residents (who were not actually members of the Forsyth community) were vehemently opposed. For several years, Forsyth was intimidated from actively pursuing or promoting development, although the town itself took action internally to prepare for and encourage change. The town openly defied the opposition forces in 1979 by offering to issue industrial revenue bonds needed to allow work on Colstrip Units 3 and 4 to proceed. According to respondents throughout the study communities, these conflicts between town and county were not created by energy development. Rather they were an inherent part of the town-county structure of the region which were revealed with renewed intensity as a result of the decisions that faced communities regarding their strategy toward development.

In Douglas, a potentially serious conflict between town and county was averted because the leaders recognized that collaborative action was the best way to protect the quality of the community. The ensuing collaboration was difficult, but it was facilitated by the relatively dense kin ties that existed between town and county residents, by the fact that the decision to respond was made early enough in the impact process (before the situation had deteriorated seriously), and by encouragement from the state and from energy companies. In Douglas, town and county government together increased its collective power by presenting decisive and mutually supportive positions on most important issues.

Chapter Six

Community Coordination and Cooperation (Integration)

6.1 Introduction

The concept of coordination and cooperation (integration) has been central to the study of human communities for many years. Basically, those who have studied integration have sought to "understand how social systems hang together and form distinct and enduring wholes" (Holzner, 1967). The concept usually carries an important normative undertone; that is, "integrated" communities are usually perceived as being "better" communities in that they are better coordinated in accomplishing community goals, and they are more likely to be evaluated positively by residents, to provide access to important decision-making processes for the various community groups, and to exhibit cooperative relationships among these different groups.

An extension of this thought illustrates the importance of the concept of integration in community research: communities that are well integrated prior to a period of change will respond more effectively to that change and will find it less disruptive than will less integrated communities.

The literature on energy development refers to concepts such as "community solidarity", "sense of community", and "community cohesiveness". We believe these references appropriately reflect the concern not only of people in the region but of people throughout the nation about the state of their communities. People want a good community in which to live, they want to have a sense of community.

The concept of cooperation and coordination, as we have used it in this study, captures the meaning and the intent of these expressions of community.

Some of the early studies of energy-impacted communities argued that rapid growth contributes to a breakdown in community integration; that is, as communities become larger and as different ethnic, cultural, age, and economic groups move in, the communities become less cohesive, and, as a result, they experience greater difficulty in resolving problems and conflicts.

However, empirical studies indicate the processes of cooperation and coordination are more complicated than expressed in the above perspective. Integration is a process of change that occurs in response to changing social conditions. Most major theoretical perspectives in sociology carry an implicit assumption that integration is a natural disposition in social life because of objective inter-dependency and similar characteristics among people who live together, but one which can be restricted in expression by extant social conditions. These restrictive conditions appear to occur under extreme conditions of differentiation, stratification, and rates of social change. Below some hypothetical threshold of these rates of change (differentiation, stratification, and social change), integration is restricted by inadequacies in the availability of necessary resources and services. On the other hand, above some hypothetical level of optimal social conditions, integration is probably restricted by the sheer scale of units to be coordinated and by the speed with which change occurs. These two threshold points undoubtedly differ among communities according to site-specific social conditions such as ecological and cultural characteristics, and they probably change over time within a society.

In this study, we estimated the nature and extent of cooperation and coordination in each community prior to development. We then traced changes in these processes as development occurred and described the state of integration in these communities at the time this study was done. These findings are briefly summarized in Table 6-1.

We have discussed cooperation and coordination last because it is the summation of the effects of the other community processes. Thus, in this section we describe more fully the relationship of the other three processes (distribution of resources and power, linkages, and diversity) to one another and how they contributed to high or low integration in the study communities.

6.2 The Relationship of Community Integration to Growth Management

It is difficult to assess the level of integration in a community during stable times. In the absence of change, processes of interaction stabilize; the actions of social groups tend to be coordinated because people know what to expect of each other. A basic sociological maxim says that change -- times of crisis and decision -- reveals the unspoken rules and norms that are guiding social behavior. When development occurs, the organizational processes in a community become more visible, determining to a large degree how communities use their resources to manage growth.

Table 6-1 Cooperation and Coordination in the Ten Study Communtiies

Community	State of Cooperation/ Coordination Prior to Development	Changes in Cooperation/ Coordination During Peak Growth Years	State of Cooperation/ Coordination in 1980
Craig, CO	Integration had been good historically, but in 1974, City Administration was uncooperative. When new council/mayor elected integration improved again, but considerable damage was done.	There was a period, 1976-1979, when change was too rapid, efforts in community were not well coordinated, and community lost effectiveness. Fear was growing among natives that they had lost control of their community. But, fortunately the rate of growth subsided.	Community was becoming reintegrated, it may now be better integrated than at any previous time. Additional resources of facilities and people have improved the ability of community to meet total needs. A more open stratification system allows greater participation by all community members than before. But many new people, especially blue-collar workers, still resent the way they were treated. If town does not make a specific effort to solve this problem it could take years for the bitterness to subside. Two problems threaten: (1) the large energy companies could interfere with local autonomy, and (2) an economic bust may occur, causing conflict and dissension.

Rangely, CO	Integration was not high, or effective. City and county not closely coordinated. City was split because of land control by a few elites. Town was integrated at voluntary social level. But lots of conflict between resource holders. Business community was not well coordinated. New business people were not getting much help because of competition for few resources.	Peak had not really hit, but change has started. Still conflict within city government, several strong antagonistic factions, which made it hard to prepare for growth. Much energy and time was wasted.	Forces for integration were growing. Mining company needed community to prepare better so was trying to facilitate. Need for preparations was creating pressure to find leaders who could resolve conflicts. But community still very much divided. Community got a $15,000,000 impact assistance package. But this is case where change process could still get out of control (negative results) unless better cooperation develops.
Wheatland, WY	Historically, integration was good. Some division existed between town and county government.	Coordination and cooperation was quite good, except for some dissension between county and city, especially on funding issues. Newcomers were integrated relatively well given their large numbers. Permanent workers were accepted into community quite well. Some local groups strongly opposed the project. But community was able to accept this dissension without becoming immobilized in conflict, which is a good indicator of how well integrated they were prior to development.	Stratification is more open. Integration of community is quite good, as evidenced by coordinated efforts to attract new industry to minimize bust effect on merchants. Dissension between county and town on spending matters still persists, but this conflict is reasonably managed, it does not seriously impair ability of community to provide for itself. The danger of a bust is there and may cause hardship but will probably not divide the community.

Douglas, WY	Good integration, but stratification was fairly closed (vertical). Was changing through late 60's and early 70's.	County, city, schools worked well together, got good resources. Avoided any major negative impacts even though growth was high. Interesting point is that some power elites played an important role. There was inequity in power, but key leaders chose to support rationalization and professionalization of city and county government. Had this not been done there could have been a period of uncertainty as there was in Craig.	Community well integrated except for mobile oil and gas workers - but even they are well provided for compared to Rangely and Evanston. Stratification less closed, but not as open as Price or Wheatland. This may be because the few who have disproportionate power have not made it necessary for others to challenge their leadership. The cooperation between government groups is exceptionally good, better even than Wheatland, Craig, and others in this regard.
Price, UT	Integration historically was good. Because of the economic and cultural diversity of the past, stratification was open (pluralistic), and the structures and processes for integrating the diverse groups in the community were functioning quite well.	Growth was not so large or sudden to cause any problems of integration. Most problems were readily solved.	The community is probably a little better integrated because of the increase in resources. They should be able to manage any future growth with few problems.

Salina, UT	Salina was well integrated because of the dominance of the Mormon community.	Because growth was gradual, and many new employees were locals or relatives of locals there were few strains on the town. This mitigation action taken by the developer (see Salina case study) was one of the most effective mitigation actions we observed. But the community remains culturally homogeneous, and very much dominated by the Mormon community.	Because the community is so homogeneous culturally and so strongly Mormon, any development that changed these characteristics could cause disintegration, a strong sense of loss of community. But the level of integration helps the community manage these other effects, so it is hard to predict what changes future growth will bring.
Washburn, ND	Community was well integrated because the stratification system was closed, and it was culturally homogeneous. There is a temptation to say this area is culturally diverse, but the diversity has rather rigid limits, i.e., the cultures and institutions of Northern Europeans are widely represented but tolerance of and experience with groups outside of this heritage is limited.	Integration did not change much. There was little increase in diversity and integration simply changed very little. This was because much of the new population was dispersed to larger urban area, i.e., Bismarck-Mandam and Minat.	The community is better prepared to handle future growth. But just as in the past, many effects of growth will be absorbed by the nearby urban areas. Thus, major changes in integration are not likely.

Grants, NM	Integration was very complicated. Three cultural groups are strongly represented -- Hispanics, Native Americans, Anglos. Within the town itself, Hispanics and Anglos were reasonably well integrated because of past developments. But in the county, among the agriculturists, integration was poor. Overall, integration was moderate.	During the decade of the 70's, growth from uranium was large so pressures on the community were strong. Grants is an example where social change probably pushed the community to greater integration, because resources and opportunities increased and solutions to problems demanded greater coordination.	Because the local economy is declining, there are disintegrative pressures. The decline in resources will slow the processes of integration. Because the past booms and busts have been severe the community has become experienced with accommodating temporary residents and can expect only modest community commitment. How the community handles future growth is highly dependent on how it handles the present bust.
Forsyth, MT	Integration was moderate. Native Americans were only peripherally present. Agricultural and townspeople vacillated between cooperation and conflict.	Actual growth was only moderate, although expectations were high and the potential for impact was high. Town and county pursued different policies. Townspeople wanted the growth, some ranchers strongly opposed it.	Integration will probably remain about the same. The presence of Colstrip will continue to moderate both the need for and pressure toward integration.

Ashland, MT.	Integration was poor. Business people, ranchers Indians and newcomers managed to exclude one another. Because the town is unincorporated, it has even further obstacles to integration. This long history of social conflict and a closed stratification system indicated development would cause numerous negative problems here.	Because growth was low almost no change occurred. Again, Colstrip absorbed most of the population change, so little happened in Ashland despite continued anticipation.	The community is still disintegrated. Future development will undoubtedly result in serious social problems. Differences between ranchers, Indians and townspeople will not be resolved easily. If growth occurs proximate to Ashland it could result in a variety of social problems which are hard to predict.

In the study cases, the level of community cooperation and coordination was obviously related to the presence of major problems. Where integration was good, most problems had been overcome. In communities where cooperation or coordination was not good, many problems occurred as a direct result. In Craig, the failure of the early city administration to cooperate effectively with the development companies and with county government blocked initial preparations. In Rangely, conflict regarding land in or adjacent to the city had recently and historically prevented successful accommodation of growth. In Ashland and Forsyth, it was apparent that the historical lack of cooperation between townspeople, Native Americans, and agriculturalists prevented any unified approach to development and resulted in an array of negative conditions.

Of course, specific impacts which occur in any given community are not just a function of a community's social organization. Other variables which influence the level and type of impacts include the size and type of project, policies of the developer, and size and wealth of the community. Even with these factors, impacts in a community are significantly influenced by the level of community integration. When other variables are similar, the impact of development will vary tremendously from one community to another. Wheatland is a good example of this. The population growth in Wheatland was large compared to any development which has occurred in the West; but it did not experience large disruption. This was mostly attributable to the great amount of cooperation in that community. Wheatland prepared itself in many ways, and resources were used productively when new or unexpected problems arose. The same is true for Douglas and Craig. However, the specific problems which occurred and the ways in which they were solved varied a great deal between these communities. What they have in common is the process by which they managed their growth problems; all three were relatively well integrated before and after the development.

It is difficult to predict social and economic impacts because site-specific and time-specific factors vary so much, particularly in relation to energy development. It is more reliable to estimate the level and type of cooperation and coordination extant in a community prior to development. The data from this study confirm that a community which is well integrated before development has a higher probability of successfully managing growth than one that is not. Further, integration in a community and the stresses placed on the integrative processes are closely related to the other social organizational processes examined in this study.

Chapter Seven

Changes in Social Well-Being

7.1 Indicators of Social Disruption

Data and observations on crime, mental health, alcohol problems, family disruption (divorce), child abuse and neglect are reported in this chapter. This information was not presented in the preceding individual summaries because they are only meaningful when used comparatively. There are many problems with the data reported here, and the reader is reminded that these data must be used cautiously and only in an exploratory manner.

Crime

The data in Table 7-1 are from the FBI Uniform Crime Reports. The table contains the rate (per thousand population) of Part I reported offenses (homicide, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft). The rates for these offenses are recorded for the nine counties which contained study communities for the decade, 1970 - 1980.

Although we report these data, we have strong reservations about their reliability. Emphasis on reporting to the FBI changed during the decade, with each state improving its reporting starting with different years. For example, Wyoming passed state legislation in 1977 to encourage reporting by local agencies. Thus, the accuracy of reporting in Wyoming improved considerably from 1978 onward. As is apparent from Table 7-1, the total number of Part I reported crimes

Table 7-1 Rate[1] of FBI, Part I Offenses for Ten Counties, 1970 - 1980

County	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Moffat County, CO (Craig)	21.92	22.08	26.56	36.77	47.20	26.36	87.49	NA	54.15	63.85	69.44
Rio Blanco County, CO (Rangely)	11.15	12.29	15.96	16.13	27.49	13.09	26.42	27.88	38.65	42.81	51.48
Platte County, WY[2] (Wheatland)	NA	NA	NA	NA	NA	NA	NA	NA	18.06	19.97	22.96
Converse County, WY (Douglas)	46.84	52.12	50.00	42.90	18.19	39.75	49.25	40.10	38.30	52.60	56.10
Carbon County, UT (Price)	36.32	32.79	29.00	26.30	23.18	19.67	22.98	NA	41.00	41.18	41.93
Cibola (Valencia) County, NM (Grants)	16.14	21.85	16.84	19.57	27.94	39.93	45.59	40.28	47.26	40.10	NA
San Juan County, NM (Bloomington)	NA	NA	NA	NA	NA	43.79	46.20	45.98	48.39	55.22	53.62
Oliver County, ND (Center)	NA	NA	3.38	6.96	5.46	10.00	11.67	13.60	15.60	12.80	NA
McLean County, ND (Washburn)	6.57	7.69	10.43	9.31	13.04	21.63	14.57	14.91	17.85	17.50	15.87
Rosebud County, MT (Forsyth/Ashland)	2.81	7.37	11.40	15.30	15.89	15.77	18.48	10.60	10.20	14.20	18.40

---

[1] Rates are calculated as number of offenses per 1,000 population.

[2] Wyoming agencies were not requied to comply with the FBI Uniform Crime Reporting system until 1978.

jumped in the three Wyoming counties during the period 1976-1978. For these reasons, the analysis in this section is based heavily on the field interviews and should be taken as suggestive.

Law enforcement officials and others maintain there is a real increase in crime that accompanies growth. The increases, however, appear to be primarily in property crimes (larceny, petty theft, burglary), assaults, and alcohol related offenses. Very little increase appear to be occurring in the so-called victim crimes - homicide (includes murder), rape and robbery. This is supported by the data; the FBI reports show very little increase in incidence of these three latter categories for any of the ten counties (data not shown here).

Formalization of law enforcement procedures and policies and increases in personnel result in more arrests and increased reporting. These factors account for some of the increase in the FBI data for some jurisdictions. However, there was a clear consensus of respondents that there is also a real and disturbing increase in crime, but primarily in the categories listed above.

Aggravated and simple assaults show dramatic increases and pose a major problem for officers in high growth communities. Assaults are clearly related to the size of construction work forces and the duration of their stay. Permanent employees of energy projects are probably no more prone to involvement in assaults than natives of the area, but we have no specific data to confirm this.

Alcoholism was reported as a major social problem in every community, though it was less public in Price and Salina. It was interesting to find that alcohol related problems were prevalant in all groups, newcomers and oldtimers, the young and the elderly. It is not clear whether rapid growth from energy development exacerbates this problem, since it was already there prior to development. But the resultant structural changes make it more necessary to formally contain or manage the problem (i.e., formalization of police procedures and increased commuting traffic means the problem is more dangerous).

Larceny, theft, bad debt cases, and insufficient funds checks create a real workload problem for local law enforcement officials who find themselves occupied as property retrievers and "paper servers". Thus, the administrative load increase for the justice system becomes a major structural problem.

It must be emphasized, however, that the lack of reliable crime data make it impossible to know whether there has been an increase in any category of crime that can be directly attributable to energy development. Even in areas like assaults it is hard to know if the increases reported by respondents are different than changes taking place in other parts of the country, i.e., it is difficult to discern national trends from local influences. The relationship between crime and energy development is still largely unanswered and will require a major research effort to provide sufficiently accurate information for policy purposes.

Family Disruption

As indicated in Table 7-2, the crude divorce rate rose in nearly

Table 7-2 Rate of Divorce for the Ten Study Counties, 1970 - 1980

County	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Moffat County, CO (Craig)	1.38	5.18	5.94	4.34	6.23	6.66	10.66	7.60	11.23	8.93	8.45
Rio Blanco County, CO (Rangely)	1.45	2.87	4.04	4.32	6.58	4.17	5.32	5.38	7.31	10.00	6.24
Platte County, WY (Wheatland)	4.16	4.39	5.39	5.94	8.14	6.29	4.56	6.76	5.88	4.28	9.02
Converse County, WY (Douglas)	3.00	3.50	3.80	4.80	7.00	7.20	6.10	6.70	6.80	6.60	8.00
Carbon County, UT (Price)	1.47	2.36	3.21	3.18	3.75	3.85	5.23	5.15	6.32	5.05	6.00
Sevier County, UT (Salina)	NA	0.56	0.19	0.66	1.93	2.53	2.77	3.65	3.66	2.96	3.40
Oliver County, ND (Center)	0.00	0.00	0.00	0.00	0.45	0.41	0.41	0.00	0.41	NA	NA
McLean County, ND (Washburn)	1.78			2.36	0.87	1.03	1.65	1.97	2.79	NA	NA
Valencia/Cabilo County, NM (Grants)	NA	NA	NA	NA	4.2	7.1	6.6	8.8	6.5	6.8	NA
San Juan County, NM (Bloomington)	NA	NA	NA	NA	5.1	7.7	8.7	5.9	6.8	6.2	NA
Rosebud County, MT (Forsyth/Ashland)	2.8	3.9	3.9	3.4	3.5	5.8	5.4	5.6	3.8	3.9	5.4

all of the study communities over the decade. It is difficult, however, to evaluate what the increase in divorce rate really means. Part of the increase must be because many of the new workers moving in are young married couples in the age categories where divorce is highest. Also, the national trend toward more divorces is undoubtedly reflected in these figures.

Even after making allowances for these structural factors, it appears there are aspects of social disorganization, especially during the peak growth years, which create family instability. Respondents -- social workers, family counselors and others -- consistently indicated that dysfunctions were perceived in more family units (family violence, spouse abuse, child neglect and abuse). It is important to recognize that increased divorce in itself should not be taken as a totally negative change. Divorces resulting from increased economic opportunity (especially for the female spouse) and increased social acceptance may be viewed by one or both participants as a positive change.

Beyond these allowances, respondents continually stressed that a rapidly growing community does have a higher incidence of family disruption. While not of alarming proportions, there is evidence of increased family violence, spouse abuse, child abuse and neglect. These changes suggest a decline in community integration affecting the family unit. A general lack of support systems (formal and informal), the absence of basic needed services, and mobility itself appear to create a structural situation wherein family functions are impaired.

Mental Health

In this section we have used the concept of mental well-being very loosely (our apologies to our professional colleagues in this area), but we believe there were patterns of behavior apparent from our extensive interviewing that needed to be communicated regardless of technical precision.

Behavioral problems that appeared to be of greatest importance in communities experiencing rapid growth are summarized in Table 7-3. As shown, increases in the incidence of psychiatric disorder were not reported as a major problem by any respondents. In several communities, however, there were large increases in what one respondent called "problems in living". This term was offered by the mental health director in Craig, Colorado and seemed to fit descriptions we recorded elsewhere. Rapid change poses numerous adjustment problems, especially for certain groups - the elderly, newly arrived parents, teenagers, and parents of single households. Simply put, rapid change renders old ways of integrating people and groups into a community less effective; there is a period when new processes of integration are developing and when new people are struggling to coordinate their lives in a new social environment. It is during this period of adjustment when "problems in living" emerge. People need help in understanding the change, or they need assistance with a particular problem. In a stable community with networks of kinship and friendship, most problems in living are handled within the established support systems. But when change is rapid and extensive, both old and new residents find themselves with every day problems

Table 7-3 Summary of Extent of Mental Health Problems in Ten Study Communities

Community	Increase in Psychiatric Disorders	Increase in "Problems in Living"	Increase in Alcohol Related Problems	Increase in Other Drug Related Problems	Increase in Family Problems
Craig	Low	Moderate to High	High	Low	Moderate
Rangely	Low	Moderate	Moderate to High	Low	Moderate
Wheatland	Low	Moderate to High	High	Low to Moderate	Moderate
Douglas*	Low	Moderate	High	Low	Moderate
Washburn	Low	Low	Moderate	Low	Low
Grants*	Low	Moderate	Moderate	Low	Moderate, Varied by Group
Ashland	Low	Low	Moderate to Low	Low	Low
Forsyth	Low	Low	Moderate to Low	Low	Moderate to Low
Price	Low	Moderate to Low	Low	Low	Low
Salina	Low	Low	Low	Low	Low

---

*Different responses by ethnic groups were noted in Grants and Douglas. In Grants, mental health workers stressed the severe cultural strains placed on Spanish Land Grants and Native Americans as a consequence of rapidly changing occupational characteristics (working in uranium mines) and wealth (as a result of high wage salary income and royalty payments). In Grants, these two groups were only two of many special groupings. In Douglas, a relatively homogeneous Anglo community, the few Hispanics apparently welcomed the increased social diversity which made them less "different".

with which they need extra help. We found this need for assistance to be moderate to high in those communities where the growth had been substantial.

We found alcohol abuse and related issues to be the major social problem in all the communities, except those in Utah. It is not clear, however, that the alcohol problem is related in any particular way to energy development. This problem was extensive among natives before development, and is extensive among the incoming population, both permanent and construction workers. With the advent of development, alcohol abuse becomes a more visible problem because treatment programs and resources are obtained as mitigation measures, law enforcement becomes more formalized, and because it permeates social interactions.

Interestingly, drugs other than alcohol were not considered a major social or law enforcement problem in any of the communities, except Grants, where it was considered unrelated to energy development. Drug abuse was a problem in some school systems, but most counselors were reluctant to say it was related to development; rather it was viewed as part of a national trend. School officials and parents viewed both alcohol and drugs as problems that were perennially present and that fluctuated in intensity.

A major issue almost everywhere were problems between family members -- spouse abuse, parent-child communication problems, child abuse and neglect. Several family counselors, however, felt these problems paralleled family disruption nationwide, largely the result of changing role definitions for women, and uncertain norms and rules for child rearing. These problems were aggravated for families undergoing cultural stress -- notably the Native Americans -- as a result of the rapid changes in economic activity and social behavior.

There was evidence of several cases of serious child abuse among the mobile construction workers. Mobile construction workers, however, present a different picture than the other populations discussed in this report. The high mobility and unique occupational structure of this group appear to present a number of special problems; more will be said about this in Chapter Eight.

Summary

Disruption of the well-being of people is one of the major justifications for doing impact assessments. The types of behaviors and measures discussed above are only a few which might be considered when trying to analyze the effects of rapid growth and change on peoples' well-being, but they are sufficient for our purposes here. The above analysis strongly suggests that a serious level of disruption of the well-being of some people does occur in a majority of rapid growth communities. However, better indicators are needed to understand more exactly the magnitude of such disruption.

7.2 Access to Resources

A number of measures of access to resources were pursued in the individual community studies, including public assistance measures, poverty status of persons, labor force participation, and employment and unemployment. Unfortunately, many of these data are not recorded in a standard format, making comparisons difficult. For this report we selected three indicators for which data were available for all or most of the study counties -- per capita income, unemployment and student/teacher ratios.

Per Capita Income

A general effect of development should be an increase in per capita income as more people are employed at higher salaries; Table 7-4 confirms this expectation. In almost every case, per capita income for the growth counties was lower than or equal to the state average in 1970, but over half grew to nearly equal or exceed the state average by 1980. The counties in Wyoming and Colorado are somewhat of an exception because energy development is so pervasive in these states that the state averages also rose considerably during the decade.

Undoubtedly, the increase in per capita income is not distributed equally in growth communities. Energy industry employees usually have higher per capita incomes than many other residents. Those on fixed incomes or employed in low-skill jobs do not appear to share in this general increase in personal income, but respondents felt that the majority of people were economically better off. One balancing factor is that costs of living for many indigenous residents are lower. For many, their rents or mortgages were fixed before the growth and they already had many of the necessities of life which newcomers have to purchase upon arrival. Although no quantitative data are available to support the conclusion, wider distribution of employment (both

Table 7-4 Per Capita Income for Nine Study Counties and Six States, 1970-1980

County/State	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Moffat County, CO	3,092	3,798	4,618	4,980	4,903	5,413	5,817	6,946	9,345	8,960	9,807
Rio Blanco County, CO	3,486	3,861	4,600	4,956	4,478	4,518	5,582	6,206	8,140	8,754	10,561
Colorado	3,855	4,197	4,610	5,137	5,500	6,006	6,526	7,204	8,102	9,114	10,033
Rosebud County, MT	2,768	2,818	3,224	4,554	4,326	5,351	4,793	4,899	6,392	6,377	7,930
Montana	3,395	3,503	4,013	4,699	4,982	5,423	5,769	6,108	7,195	7,894	8,652
Valencia County, NM	2,346	2,436	2,784	3,049	3,391	4,015	4,561	5,241	5,962	6,674	6,857
San Juan County, NM	2,408	2,731	3,050	3,357	3,886	4,647	5,364	6,224	7,147	7,575	8,301
New Mexico	3,072	3,278	3,593	3,944	4,323	4,791	5,282	5,748	6,457	7,150	7,878
McLean County, ND	2,755	2,791	3,614	5,502	5,725	6,466	5,585	6,429	9,020	7,921	9,590
Oliver County, ND	2,561	2,541	3,178	4,964	4,933	4,820	5,865	4,225	7,325	6,613	7,597
North Dakota	3,086	3,454	4,012	5,746	5,883	5,896	5,756	6,092	7,635	7,683	8,626
Carbon County, UT	3,038	3,155	3,505	4,039	4,435	5,214	5,710	6,192	6,820	7,813	9,153
Sevier County, UT	2,729	2,915	3,359	3,905	3,988	4,344	4,811	5,186	5,761	6,080	7,148
Utah	3,220	3,435	3,730	4,072	4,449	4,827	5,306	5,810	6,405	7,042	7,681
Converse County, WY	3,873	4,162	4,563	4,489	5,353	5,936	6,549	7,184	8,177	9,120	11,014
Platte County, WY	3,846	3,679	4,243	4,668	4,832	4,621	5,166	6,115	6,649	7,646	7,735
Wyoming	3,815	3,847	4,352	5,120	5,662	6,127	6,777	7,649	8,627	9,630	10,898

construction and operations) among long-time residents appeared to occur in the communities where energy development had the longest history and was perceived to have a promising future. In Craig, Price, Grants, Douglas, and Wheatland, for example, a surprising proportion of long-time families had one or more members (often children) employed in these relatively high-paying occupations.

Unemployment

Indications of the percentage of unemployed, Table 7-5, suggest that the level of employment is generally high in the impact counties. But comparisons to state levels indicate that unemployment is often higher than state averages, and may even be higher in some impact areas than it was prior to growth. This latter fact may be caused by people coming to the area looking for work who are not well-qualified for the jobs available. Also, it appears that as the growth tapers off unemployment goes up, representing a loss in material well-being (see Platte, Moffat and Rosebud counties).

Respondents in some communities such as Douglas, however, indicated that there was literally no unemployment among people capable of being employed, at least during the growth phase. The employment level among locals appeared to be virtually 100 percent.

In Colorado and Montana, we found a number of the unemployed were people who had fled the depressed areas of western Montana, Oregon, and Michigan. Some had just arrived and would eventually find work, but others were not qualified for high-paying energy jobs. Most who do not find work were reported to leave after a short period of time,

Table 7-5 Rate of Unemployment for Nine Study Counties and Six States, 1970-1980

County/State	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Moffat County, CO	3.5	3.5	3.6	4.1	3.4	6.4	5.9	6.2	4.9	4.6	5.3
Rio Blanco County, CO	4.2	3.6	3.2	3.4	2.7	3.2	3.2	2.6	2.2	1.5	1.9
Colorado	3.5	3.3	3.1	3.0	3.5	5.2	4.9	4.7	3.7	3.2	3.5
Rosebud County, MT	3.1	3.0	3.2	3.2	3.6	3.3	5.8	6.9	5.9	5.0	5.4
Montana	4.3	4.8	4.8	4.8	5.2	6.4	6.1	6.4	6.0	5.1	6.0
Valencia County, NM	6.8	7.8	7.4	8.0	8.8	9.6	8.8	7.4	5.6	6.7	8.7
San Juan County, NM	11.7	11.0	11.0	10.7	10.7	12.2	10.3	7.5	6.4	8.1	7.8
New Mexico	7.7	8.2	7.5	7.4	8.2	10.0	9.1	7.8	5.8	6.6	7.4
McLean County, ND	*	*	8.7	9.1	7.5	6.9	7.7	7.2	5.2	4.6	6.3
Oliver County, ND	*	*	8.6	10.3	6.1	5.6	5.3	4.0	4.1	4.9	7.1
North Dakota	4.7	5.4	4.9	5.1	4.6	5.2	5.1	5.5	4.3	4.0	5.0
Carbon County, UT	10.0	11.3	10.1	8.0	7.2	8.0	6.9	5.6	5.0	4.7	5.1
Sevier County, UT	6.8	6.0	6.4	6.1	5.9	7.3	6.5	5.6	4.1	3.7	4.7
Utah	6.1	6.6	6.2	5.8	5.5	7.3	6.5	5.7	4.6	4.5	5.4
Converse County, WY	3.4	3.0	3.4	3.0	2.7	2.9	2.3	2.8	2.8	2.1	3.1
Platte County, WY	1.9	2.7	2.8	2.3	2.6	2.9	3.8	3.1	2.9	2.7	6.0
Wyoming	4.5	4.6	3.8	3.3	3.4	4.2	4.1	3.6	3.3	2.8	3.9

* Information unavailable.

in part because of the proportionately high cost of living for newcomers in rapid growth towns.

Student/Teacher Ratios

The quality of education is a major concern among most people in this country, and the ratio of students to teachers is a good indicator of the availability of resources. The data in Table 7-6 reveal that the resources available for education in impact areas did not decrease, and in some areas it even improved.

Educators, students and parents in all of the communities indicated that the quality of education had not suffered, although in some areas the opposite may have been true. In Craig, Wheatland and Douglas excellent new school facilities had been built, providing many luxuries that had not been available prior to development. But growth does cause high turnover and the costs of education increase. Most school districts had been able to get additional aide and none indicated that the quality of education had decreased with growth.

Summary

Increases in access to resources is an important dimension of how energy development affects community well-being. The indicators reported here and, more importantly, the responses of local residents suggest that most of the growth communities have increased their material well-being once the chaos of the very rapid period has passed. Incomes increased, more capital was being circulated, and most public services had been improved.

Table 7-6 Student Teacher Ratios for Nine Study Counties and Six States, 1970-1981

County/State	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Moffat County, CO (Craig)	20	20	21	21	19	19	19	20	20	20	19
Rio Blanco County, CO (Rangely)	19	18	19	19	20	18	18	18	20	19	20
State of Colorado	23	24	23	22	21	20	20	20	19	19	19
Platte County, WY (Wheatland)	NA	NA	NA	17	16	16	17	17	17	17	18
Converse County, WY (Douglas)	NA	NA	NA	17	16	17	18	18	17	17	17
State of Wyoming	NA	NA	NA	18	18	18.4	18.4	18.4	18.2	17.8	17.7
Carbon County, UT (Price)	NA	24	24	24	23	23	23	22	23	22	NA
Sevier County, UT (Salina)											
State of Utah	NA	25	25	24	24	23	23	23	22	22	NA
Cibola (Valenero) County, NM (Grants)	18.9	17.6	17.5	17.3	19.3	18.6	18.8	17.5	21.7	20.9	16.4
San Juan County NM (Bloomington)											
State of New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oliver County, ND (Center)	19.5	15.7	17.5	16.8	16.5	17	15.8	15.7	15.7	15.6	15.0
McLean County, ND (Washburn)	18	18	17	15	15	17	15	14	14	14	16
State of North Dakota	20	19	19	18	18	17	17	17	16	16	17
Rosebud County, MT (Forsyth/Ashland)	NA	NA	NA	NA	NA	18	16	16	15	15	15
State of Montana	NA	NA	NA	NA	NA	18	18	18	17	17	17

There are several areas for concern, however. As the growth was diminishing in Craig, Wheatland, Douglas, Washburn, Forsyth and Grants, there were early indications that recessions were beginning in these towns. Grants and Douglas were particularly hard hit by the decline of the uranium industry. Undoubtedly, these communities prospered more in the past decade than they would have without growth. But if development levels off or declines, these communities could potentially be worse off in the next decade than they would have been if no development had occurred. If growth towns are left with high debt loads, if there are large increases in unemployment, and if very many new businesses fail, the period following growth may witness a decrease in community well-being. It was too early to know if these problems will occur, but the potential is there and merits close attention.

7.3 Perceptions of Community Well-Being

As stated in Chapter One, the research teams were instructed to record perceptions of community well-being as differentiated from perceptions of individual well-being. That is, we were interested in assessing respondent's perceptions of the major structures and processes operating in the community, particularly as they related to development.

Such perceptions of the community may be related to objective measures of changes in community processes and patterns, but may not completely correspond with them. Obviously, social reality is the interaction of the objective and the subjective. Therefore, the state of community well-being is relative to an individual's experience with actions in the community and his perception of those actions.

Thus, we were interested in estimating peoples' perceptions of the social organization processes extant in the community prior to development and their perceptions of how these changed as growth proceeded. We were further interested in how such perceptions may have influenced various behaviors of different groups. Since the project did not use any structured instruments, the results presented here are only exploratory. Major observations are reported for each community in Table 7-7.

Changes in Perception of Community

Community pride and identification with the community was generally high among residents in the study communities. This was particularly true of long-time community residents, who were personally concerned with the community's effectiveness in responding to development. Among residents in communities that had been small and relatively undifferentiated prior to impact, the rural, small town way of life was highly valued, and its preservation given priority. (These communities included Douglas, Wheatland, Craig, Salina, Washburn to a great extent, Forsyth and Rangely to a moderate extent, and Price and Grants to a lesser extent.

Increased diversity was important in many residents' perceptions of community change; increases in differentiation appear to constitute much of what are frequently referred to as "life-style changes" that carry so much emotional weight. Residents' perceptions of the extent

Table 7-7 Perceptions of Community Structure and Processes in Nine Study Communities

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Rangely (Rio Blanco County, Colorado)	Most local residents said community was a good place, social groups (clubs, churches, etc) worked well together. But this cooperative community spirit did not extend to the economic sphere. There was open acknowledgement by most respondents that land-holding in and around town had been a devicive force since the 1940's. There was a curious division in this perception. At one level, people said the town was well-integrated. But at the economic level, cooperation among merchants was poor, land developers bickered, city leaders were unable to secure good services and development by-passed Rangely several times, going to Vernal and other places. People perceived at least three groups. Permanent locals, transient energy workers, and permanent energy employees many of whom lived out of town in "Company Towns". All groups perceived themselves as not being integrated with the others. Most people in all 3 groups perceived the stratification system as being closed, controlled by a few elites. Locals felt the town was integrated at the social level only. Other two groups saw the town as poorly integrated. In all groups most agreed differentiation -- economic, social and political - was low, as were extra-local linkages. As one man said, "Rangely isn't the end of the world but you can see it from here."	People perceived integration of social, voluntary level as improving with growth. But strong conflict was occurring between public leaders and between members of the business community. This was a widely shared perception. Transient workers perceived their group as being abused and exploited and that it was getting worse, not better. This perception, interestingly, was shared by other groups. It also appeared to be congruent with objective indicators. Thus, integration between the three groups was not perceived as improving. The new group, the coal company employees, were determined to improve relations, at least between them and locals in town. But no one perceived much improvement at the time of the interviews. The only perceived change in social organization was that linkages had expanded. Because change was only beginning, change in other areas was slight and perceived as such. People in all groups wanted development to occur. But because of past history many were doubtful that growth could be well-managed. Many people felt the growth process would be difficult, they were skeptical that integration -- cooperation and coordination -- among the three main groups would really improve much.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Craig (Moffat County, Colorado)	Stratification was felt to be dominated by the ranching community. Differentiation and extra-local linkages were perceived as quite low -- Craig was quite isolated from the state and the nation. But integration was perceived a good -- people said it was a good town, a good place to live. But many perceived the town was dying. The young were leaving, the town lost population in the 1960's. There was an underlying worry about making a living for all but the really well-to-do.	There was a distinct difference in perception between the peak period and the leveling-off period. Most people, new or old, didn't want to go through the peak period again. For most people there was the feeling of a town out of control, they weren't sufficiently prepared and the stress of coping was at least uncomfortable for numerous people. At the time of the interviews most people perceived the community was better off. People had a greater sense of vitality in the community. The community was perceived as "reorganizing" on a broader base, new people were seen as gaining control in some areas, but little resentment of this was expressed. It appeared there was some anxiety about such changes, but little hostility. A major perceptual factor was that many newcomers felt abused. Regardless of how poorly or well they were actually treated, the dominant perception of newcomers was that they had been poorly received by most locals.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Douglas (Converse County, Wyoming)	Douglas was seen as a small, homogeneous community with a traditional agricultural base. Long-time merchants appreciated the small-town atmosphere - the informality, familiarity and personal recognition characteristic of business relationships. Residents repeatedly stressed the importance of the town's history as a nice, stable, rural community. In the early 1970's there was great uncertainty about energy development in Converse County. This uncertainty, coupled with the basic conservatism of the people, meant very little action in terms of planning for growth in the early stages. Residents were reluctant to experience rapid growth because of the potential for substantial change in community characteristcs. But when growth seemed inevitable, the community began to prepare diligently and effectively. In 1975, most respondents expected greater economic opportunity as a positive effect of energy development. However, they also felt that there would be many negative effects: less unity and friendliness, more crime and illegal drug use, the loss of individual recognition and attention. Many of these expectations of negative consequences were based, in part, on observations of the events which occurred in Gillette and Rock Springs.	In 1981, most respondents felt that many of their expectations of negative consequences had been confirmed. Uncertainty was perceived by many as a major negative effect of the rapid growth period. There were also many perceived positive effects, most notably the new recreation center and the increased availability of goods and services. Most old-time residents felt the newcomers were friendly and cooperative. Newcomers also expressed positive perceptions of long-time residents. Most newcomers felt they were being fairly treated by local government officials and staff, which facilitated the integration process. However, many old-timers regretted the loss of their sense of individuality and the special attention which had been an important source of community spirit. Many residents, defining the growth as "moderate", did not perceive the full extent of the actual growth which occurred. This was due, in part, to the multiplicity of projects, which prevented dominance of the economic sector by any one employer. The absence of a perceived "high impact" is also the result of the cooperative efforts of city and county leaders to respond to the demands of rapid growth responsibly and effectively. The recent decline in the uranium industry has again focused on the uncertainty of the effects of rapid growth on the community and its individual members.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Washburn (McLean County, North Dakota)	Even though the income level of local residents was below the state average, striking inequities of wealth were generally not evident. Local residents exhibited notable homogeneity of lifestyle. The local resource base is generally restricted to agriculture and development of local coal reserves. Such a limited resource base has not lent itself to industrial diversification. Major organizations were agricultural, Chamber of Commerce, civic clubs and local churches. While the number or diversity of local organizations had not changed appreciably over the last four decades, there was considerable interest in and support for local community affairs. Local elected officials were, for the most part, either directly engaged in agricultural pursuits, proprietors of businesses who depend on and cater to agricultural interests, or proprietors of businesses who also maintained interests in family farms. The general agricultural orientation of county and community leadership seemed to have engendered character and integrity of the local community as well as a generally conservative approach to growth management. Local residents have generally enjoyed moderate doses of prosperity provided by development without severe quantitative or qualitative social impacts and, hence, have held largely positive attitudes toward development.	Excepting additional commercial activity during peak construction, community organization and leadership seemed to exhibit notable persistence. Though local residents perceived decreased quality of life associated with development, they also welcomed accompanying economic benefits and perceived an increase in the friendly and positive nature of social relations. Construction and operations workers also attested to the friendly, open nature of local residents. Population increases required a moderate expansion of local housing stock, law enforcement, education, culinary water, and wastewater services. The construction work force provided a temporary impetus to the local economy, but the operational work force has not been sufficient to sustain economic activity at this high level. The predevelopment power structure remained largely intact as did the majority of norms governing behavior in public and private affairs. The historical dominance of agriculture and commercial interests in the stratification system remains largely unchallenged. Residents welcomed development and made concerted efforts to integrate newcomers; the area's social fabric has remained essentially intact.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Wheatland (Platte County, Wyoming)	Wheatland was and is a relatively homogeneous community. Residents were proud of their community, felt like it was a nice place to raise children. People were concerned that the town might have been slowly dying or at least stagnating. Such stagnation meant low wages and/or out-migration for economic reasons. This is the common perception of people that live in town and do not work in agriculture. Whereas Wheatland had the social interaction to produce "community" it did not have the economic base to provide additional jobs for young people growing up. Some town residents felt the community had good community spirit exhibited particularly through school organizations which involved both parents and students. Other residents perceived the community in positive terms but then indicated the parochial, nonprofessional manner in which things were done. Ranchers and farmers had similar perceptions of community as those indicated above, jobs probably were not as important to this group as to people that lived in town. This group seemed to maintain the most control at the county level whereas local town influentials probably had more control at the local level.	Town people felt Wheatland handled development well and this was a source of civic pride. Adaptation by local residents and the creation of the Impact Alleviation Task Force were the most often cited reasons for why the community coped so well. Residents perceived increased economic benefits, increased service levels (new restaurants, expanded businesses) and increased diversity of interests, skills, and lifestyles. Local residents seem convinced more now than ever that the community's future lies with economic development. An economic development committee is trying to recruit new industry to the area. A campaign to promote Wheatland as a good place to live and work is underway. Residents generally feel good about their community and how they handled change. Ranchers and farmers have defined development less favorably. They think the long term consequences of development will be negative. The agricultural interests have been in conflict with the power project over water. They also think the townspeople are expanding facilities and services beyond the ability of the community to pay. Newcomers generally defined Wheatland as a nice, friendly, small town. Schools were defined as good and Basin Electric, the project sponsor, was perceived as a good company to work for. Complaints centered on the town being boring with not enough to do.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Price (Carbon County, Utah)	For many years, Price had considered itself an energy based town. Residents generally prided themselves on the amenable relationships among the varied population and enjoyed the openness of the political system. Because of its experience with past growth and decline, long-time residents were considered survivors who were committed to the community. Residents generally trusted community leaders to take effective action, the overall well-being of the community was a relatively salient goal. As the existing coal operations were purchased by larger companies and coal-fired generating facilities were sited in the vicinity, residents' hopes for a prolonged period of growth and prosperity were high.	Generally residents did not note major changes in their perceptions of the community over the study period, although the economic base was considered to be more stable and some changes in social patterns of crime and divorce were observed. Residents felt that the community had managed growth well, although the shortages of water and housing were seen as distressing and problematic. The increased availability of retail goods and services was viewed favorably by most residents.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Salina (Sevier County, Utah)	Sevier County residents were concerned over the continued out-migration of area youth. Given the community emphasis on family ties, this pattern was seen as socially undesirable. Residents highly valued the small town, rural, Mormon characteristics of their town. They perceived the town and themselves as independent and self-sufficient. Although community facilities and services were sparse, they were somewhat compensated for by church activities, and allowed the town to live within its means while maintaining a moderate tax structure. Although economic levels were generally low in terms of per capita income, residents felt compensated by a high quality of community life.	There were three major changes perceived by community residents. Increased employment and the retention of family members was considered highly positive. Deviation from the traditional fiscal policies of municipal finance that had reflected the "do it on your own, live within your means" philosophy offended many older residents, particularly when it was combined with higher property tax rates. Finally, the utilization of federal funds to construct low-income housing was not well received by everyone. Some residents did not like accepting federal assistance, nor did they approve of persons who lived in subsidized housing. On the whole, however, residents' perceptions of Salina in 1980 were remarkably similar to those recalled for the pre-impact period.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Ashland (Rosebud County, Montana)	Ashland was seen as a small but highly fragmented community. The businessmen were dependent upon people (the Indians and Mission people) for whom they had little liking. This attitude antagonized the Indians and Mission people. Some townspeople and Indians were not liked by some ranchers who tended to avoid Ashland. Many businessmen were lukewarm toward development. While they wanted more business, they didn't want large-scale change or challenges to their positions of status and influence. Most Indians and Mission people were against development as they felt it would further deteriorate their position. About the only people who expressed favorable sentiments about living in Ashland as it was (and continues to be) are the White businessmen who enjoy their way of life. Most others indicated they would like to change, e.g., primarily by becoming more open and relaxed. Most residents realized that Ashland, as it was (and is), would not be able to cope with major community change and would be severely impacted by any large-scale local development.	Residents perceived that the only changes that had occurred in the community were due to the anticipation and uncertainty of development. Although a few changes had occurred in community facilities (school/sewer) other conditions were not much affected.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Forsyth (Rosebud County, Montana)	Perhaps the most salient perception of Forsyth prior to development was that it was a town with no future. Both agriculture and the railroad had declined in the previous two decades and there was little potential for new enterprises, although residents were actively soliciting new business. The community was in favor of growth and development believing the adverse effects of growth would be overshadowed by the positive benefits. Although the city council was uncertain about the amount of change to expect, and when, they were confident they could handle the growth, and that community residents would support their decisions. Tension between town residents and the agricultural interests who opposed growth were long standing.	For the most part, residents felt that Forsyth had not changed very much, that population impacts were temporary and their consequences fairly well managed. The business community welcomed the increased trade from the people in Forsyth and Colstrip; many businesses were saved, some expanded. Most people thought Forsyth benefited from the development of Colstrip. Many were also angry that the ranchers held up the construction of units 3 and 4, since most had planned for a continuation of the development rather than a hiatus between the two projects. Many community residents would like to see some development come directly to Forsyth since Montana Power's aggressive community actions at Colstrip have placed Forsyth largely in the same position it was prior to the development period.

Table 7-7 (Cont.)

Community	Perceptions of Community Prior to Development	Perceptions of How Community Changed
Grants (Valencia/ Cibola County, New Mexico)	Grants was seen as a complex community with a history of boom and bust periods, throughout which a core population had persisted. Community social relations prior to and at the start of the study period were disrupted by considerable violence in the school, and by violent demonstrations of "gang" behavior. Drug use was a problem. Inter-ethnic/cultural relations were complex; there was a constant balancing of power among Anglos and Hispanics, Democrats and Republicans, that was perceived throughout the community. Community facilities were considered moderate-to-poor. Roads, the water/sewer system, schools, municipal buildings were all considered marginal, with roads a major problem. The community anticipated a new uranium boom during the 1970's though with the national emphasis on nuclear power, high levels of uranium development were expected to persist indefinitely. Some long-time residents continued to regret the loss of mutual familiarity that had prevailed in the community during the 1950's.	By 1981, the residents of Grants were experiencing a rapid and nearly complete decline in uranium activities. The attitude of most long-time residents was to contract their business activities, and survive until the next growth period arrived. In part because of assistance from the state, Grants had made substantial improvements in municipal facilities, especially roads, and these were appreciated. State encouragement had enhanced cooperation with a neighboring community on municipal facilities. This was also viewed favorably. Nevertheless, residents continued to feel that the community tax base was only marginally adequate. The establishment of Cibola County out of the western portion of Valencia County, with Grants designated as county seat, was viewed as a major accomplishment and an improvement in local control. Because of the extensive prior experience with uranium development, most Grants' residents did not view the changes that occurred during the 1970's as unique. This was not true for the residents of Spanish Land Grants and Indian Reservations where location of uranium activities with concomitant employment and royalty provisions substantially altered the traditional way of life and level of resources, changes which came to an abrupt end with the decline of the uranium market.

of community change appear to be closely related to changes in diversity. For example, despite the extent of growth in Price and Grants during the study period, residents of these two communities generally did not report feeling that the "basic character" of the community had changed; in Douglas and Craig, however, where the changes in differentiation were high (and widespread), residents repeatedly spoke of "how things were". Although residents in these communities obviously viewed the increased diversity with regret, they simultaneously recognized it as necessary and beneficial. Many of those interviewed exhibited deep awareness that community changes were interlinked -- that one could not have change in only some aspects of community while preserving others.

In this research, as in other research works, the importance of economic benefits -- to the individual, to their family members and to the community as a whole -- was highly valued, constituting perhaps the principal criterion for evaluating project effects.

As mentioned above, residents' evaluations of community response was important to their perceptions of the community following impact. To a great extent, this evaluation appears to correspond to our evaluation of community integration (coordination and cooperation) and the ability and will of leaders to organize and guide community response. Residents in Douglas, Price, and Wheatland generally felt the community had done a good job of coping; that local leaders had performed well, justifying the community's selection of them. In Forsyth, Salina, Grants, and Rangely numerous residents felt that many newcomers had been treated poorly, and that community performance had not met expectations.

In all communities that had experienced a period of high uncertainty and/or intensive growth -- Craig, Forsyth, Douglas, Wheatland, Price, and Grants -- residents reported chaos for a period (deterioration of integration and resource availability; confusion or overload among leadership; widespread decrease in personal familiarity; and increased anxiety over problems in living) during the peak growth time. Most wished to avoid similar conditions in the future, although the majority continued to favor "controlled growth".

Once the rapid growth period was past, particularly the first rapid growth spurt, residents reported their anxieties receded. Their descriptions of the community during this post-initial growth stage indicated a feeling of participation in a community rebuilding -- re-establishing its networks. Despite the extent of change that occurred in Douglas, Craig, Wheatland, and Washburn, residents generally reported, "Douglas is still Douglas", the essential nature of small town life had been preserved.

In Price and Grants, residents generally did not talk about the community from this intimate perspective. In these communities residents appeared to perceive the changes much more in limited terms -- change in physical or material characteristics or in economic opportunity - rather than in terms of their relationship with the community. We interpret this as a consequence of the high pre-impact differentiation in these communities.

Residents in the study communities, with the possible exceptions of Ashland and Salina, did not view their communities as fragile. Rather, they viewed both themselves and their communities as survivors with both the determination and resources to deal with a changing world. Their ties to the community tended to be high, therefore their perception of community well-being affected their perception of their own individual well-being.

Relationship of Perceptions to Behaviors

Residents in all study communities, again with the possible exception of Salina, were anxious to see their community survive and respond well to the pressures of growth. Many reported their most serious conflicts with leaders had occurred because they were uncertain that the leaders actions would produce favorable outcomes. This concern for the long-term outcome of the community appears to have heightened many residents' awareness of behavioral indicators of change. In all communities (with the exception of Grants where the issue was focused on the police's racial impartiality) residents were extraordinarily attentive to crime, fearing changes in crime characteristics that would indicate a community change. The increased crime that did occur was important to residents perceptions of community and personal well-being. The same, to a lesser extent, was true of alcohol abuse.

Long-time residents' major concern appeared to be that the norms of the community would change and that they would personally be affected by a crime, although this aspect was also important in some communities for some groups. This appeared to be behind concerns that child abuse and, especially, neglect or welfare dependency, or divorce had increased.

Although there were a few reports by newcomers that perceptions of their welcome into and role in the community influenced their behavior both toward the community (long-time residents specifically - politeness, vandalism, bad check writing, driving characteristics) and toward themselves during their stay (drinking to excess, fighting or quarreling, staying at home instead of participating). The extent that these types of perceptions affect newcomers' behavior is not known.

For these reasons, despite whether the socially undesirable behaviors were the result of community characteristics/environment or the result of behavioral traits carried in by the newcomers, change in the behavioral indicators of a community did appear to affect residents' perceptions of the community and, hence, of their own well-being. Interestingly, these perceptions appeared to be very much tied to change over the impact period rather than to the absolute level of behaviors.

Chapter Eight

A Summary of Social Effects

8.1 Summary of Findings

The information gathered in a broad, comparative study such as this can be summarized in many ways. We decided to summarize the information by coming full circle -- that is by returning to answer the research questions articulated at the BLM conference and those drawn from the literature review for this project.

We first summarized all the information gathered from all sources to answer the seven major questions posed at the BLM conference. We then answered several additional questions drawn from the literature review. In these answers we continually referred to the Social Organization Model (Figure 1 presented in Chapter 1) in regard to the component parts and their interaction. We believe this emphasizes the value of the model since thinking in terms of the model helps derive clarity from a complex body of information.

8.1.1 The Seven Research Priorities Developed at the BLM Conference and Related Questions

A. What is the distribution of socioeconomic effects among groups in impacted areas?

Members of the research team were specifically directed to try to determine appropriate social groupings in each community and were given a number of potentially useful questions.

The literature has suggested that energy impact could be negative for the elderly, people on fixed incomes, minority groups and school age children. We found very little evidence, however, that impact is particularly or consistently negative for any of these groups. We did find evidence of variance in the level of effect between communities and of specific ways in which some of these groups are differentially affected.

Elderly people on fixed incomes or with few resources certainly are vulnerable during rapid change, but the situation varied from community to community and between individuals. In Wheatland and Douglas, senior citizens' housing was built and the managers had a hard time finding people with sufficient need to qualify for the housing. Those who qualified and moved in reported a high level of satisfaction and support for growth. Welfare workers were not able to identify any elderly who were disadvantaged because of the growth.

In Craig, senior housing was also built and it was reported that those who moved in benefited. But in Craig a number of elderly citizens did seek counseling, and welfare workers reported some cases where elderly people on fixed incomes needed assistance because of increased prices and higher rents.

No serious effects for elderly persons were reported in Washburn, Rangely, or Ashland. This was largely because growth had been limited within the community, either because the projects had been small to date (Rangely) or their effects had been small because the major population influx had occurred elsewhere (Washburn and Ashland).

Effects on the elderly in Forsyth, Grants, Price, and Salina were moderate. To a large extent, this was the result of increased property taxes as municipal governments strove to provide necessary services while revenue lagged. These effects were therefore moderated when major facility response was completed or when assistance from the state was forthcoming.

No negative economic effects were noted for minority groups in any of the study communities. In Craig and Price, Mexican-American workers in-migrated, apparently raising both the income level and social status of these groups through upward occupational mobility. In Douglas, Mexican-Americans reported benefits from the increased social differentiation brought about by growth. In Grants, community mental health workers noted strong economic benefits but high cultural conflicts, personal and familial stress, and disorientation among Native Americans and Spanish land grant residents participating heavily in energy development employment. In neither Forsyth nor Ashland were Native Americans particularly affected. The primary effect on Native Americans in Rosebud County was mediated through the tribal governments and the reservation.

Many parents expressed concern about the effects of rapid growth on the school system, but, interestingly, few teachers or students appeared to share this concern. Educators reported varying levels of drug problems in the schools, but few were willing to say drug usage resulted because of growth. Rather, most respondents felt the trend toward drug usage was a national phenomenon that would have appeared in their schools anyway.

The one group of school children who appear to be having educational problems are the children of mobile construction workers and itinerant oil and gas workers. School officials reported high incidences of learning disabilities and an overall lower achievement level for this group. (These mobile populations do represent some severe impact problems and are discussed in a separate section below.)

Whether or not particular social groups suffer negative impacts is highly variable between communities. It was apparent that the effects of growth are highly dependent on the social organization of a community, and the philosophy and actions of the developers. The project in Wheatland was large and development was rapid, but few, if any, groups suffered serious negative consequences, and many groups benefited and prospered. The same could be said of Price, Salina, Craig and Douglas. If a community has a history of good cooperation/coordination and the developer is cooperative, it appears negative effects for specific groups can be minimal. Lacking these characteristics, the probability of negative consequences is greater, but will vary from situation to situation.

B. What determines the capacity of communities to manage growth?

Three variables appeared to be most influential in determining whether a community can achieve quality growth:

1. The approach of the developer, i.e., whether developer supports quality growth with actions and resources.
2. The degree of cooperation/coordination (integration) within the community.
3. The level of community resources available when growth begins.

To develop this explanation we first ranked the ten study cases in terms of the extent to which they experienced quality growth:

Quality Growth Experience: Good Outcome

Douglas
Wheatland
Salina

Moderate Growth Experience: Moderate Outcome

Craig
Washburn
Price

Poor Growth Experience: Poor Outcome

Ashland
Forsyth
Rangely
Grants

Within this ranking system, the first group, "Quality Growth", means that major needs were successfully met, i.e., no major shortages of facilities or services occurred and we found little evidence of any group suffering significant negative effects because of the development. "Moderate Outcome" means that the results were generally acceptable but some problems occurred which could and should have been avoided, such as shortages in services or facilities and/or significant social disruption to one or a few social groups. "Poor

Outcome" means a number of problems occurred, are occurring, or would have occurred that clearly impair the well-being of a significant number of people; in our judgment, shortages of facilities and services were severe at least for some period of time, or there was clear evidence of social disruption or social conflict that would be defined as negative by any research assessment.

The "Good Outcome" Group

These three communities managed growth quite well. Empirical proof of this is the absence of articles in the public media talking about "boom problems" in these towns. Most of us have heard of Gillette, Rock Springs, or Colstrip, but few outsiders have heard of Douglas, Wheatland, or Salina, except in a positive way.

In Douglas, the community was primarily responsible for its success in managing growth. It was impacted by several industries in the early and mid-1970's. These companies did help a little, but they began operations prior to the passage of Wyoming's Industrial Siting Act, passed in 1974-75. The town and county worked together, quietly passing bond issues and acquiring state and federal grants. Few people are aware that the rate of growth in Douglas between 1970 and 1979 was about equal to that in Craig, Gillette, and Rock Springs.

Resources in Douglas were moderate when growth began in 1971-72; the town was attractive and had relatively good services and facilities. A power plant had been built in the county in the 1950's, so some local people had experience with managing growth and the county had a strong tax base. These and other associated factors helped the community in managing rapid growth from 1971-1980.

In Wheatland, two of the three needed variables were present. The developer, a Rural Electric Cooperative (REA), had an explicit philosophy of managing for quality growth and had considerable experience. Platte County and the community of Wheatland had a long history of successful achievements. The governing bodies, public service agencies, and voluntary associations cooperated well and coordinated their skills and resources to achieve needed goals. The community and the developer formed a task force which became a viable and important structure for managing growth. Specific testimony to the high level of integration in this community was that it was able to successfully tolerate, even accept, dissent. While the project was strongly opposed by some local groups, this did not split the community into conflicting factions, incapable of taking action. There were certainly times of stress, and particular individuals may have felt maligned from time to time, but the research team observed that most groups, even the opposition groups, were still able to coordinate and cooperate on mutually beneficial goals.

The community did not have a particularly good resource base. The tax base was low, and facilities and services were old, in need of repair and expansion. The town and the school district had to expand their facilities and services significantly in a short period of time. Yet these expansions were accomplished. There was no housing shortage, no one ever lived in tents or shacks, schools were never overcrowded, and there was never a period when local services were clearly overwhelmed. This testifies to the fact that even if a community is small and has few resources, impact can be well managed if the other two characteristics are present.

Salina was like Wheatland. It had a limited resource base; but the community was well integrated, and the developers were cooperative and responsive. Resource growth was more gradual and they did not have to develop many of the adaptive mechanisms used in some of the other communities. But indications were that they probably could and would have marshalled a stronger response had growth been more rapid.

The "Moderate Outcome" Group

To state publicly that one town has managed growth better than another town is stepping on thin ice, and local groups charged with maintaining public image are bound to feel a sense of alarm. The authors of this report appreciate that concern and have tried to be empathetic in conducting and recording the results of this study. It is clear, however, that there were differences in the way that growth was managed and it is important for future efforts to try to analyze and understand these differences.

All three of the variables for managing growth were present to some degree in Craig. Facilities and services were available when growth began because of improvement activities undertaken previously in an effort to attract industry to the community. The community was relatively well integrated with a history of cooperation in achieving objectives.

The cooperativeness of the developers was mixed, however, for two reasons. First, there were multiple developments occurring simultaneously and the commitment to quality growth management varied among the developers. Secondly, even those developers who had a clear commitment to quality growth were not, at least in the beginning, prepared to provide the level of resources needed.

Growth appeared to have been relatively well managed in Craig with the exception of the early stages of the growth period, 1974-75, when there was a delay in planning for a variety of reasons. The major reason appeared to be a city administration that was not responsive to local needs. Also, a number of groups, both in the public and private sector, were uncertain about whether growth would occur and, therefore, were reluctant to make commitments in a sufficient time frame. The community's hesitancy to respond in the early stages of growth was one of two major factors which accounted for the fact that Craig did not manage its growth as well as it could have. The other factor was that the major developers were not committed to providing the level of resources, particularly front-end funding, that was needed by the local community. As a result, three particular impacts occurred which could have been avoided and which would have made a significant difference in the effects of growth. The factors involved were:

1. No provision was made to insure that an adequate supply of housing for secondary workers would be available.

2. Expansion of basic city facilities and services, i.e., sewer, water and paved streets, were not accomplished as quickly as they should have been.

3. Human service agencies were not upgraded and expanded quickly enough to handle the new demand created by growth.

Thus, Craig appears to have gone through a catch-up period which in many ways was psychologically very costly to the community. Once it was clear that the supply of housing was going to be grossly inadequate, and that public service agencies were unable to meet the level of demand being placed on them, then the community and the developers organized and increased their efforts and cooperation. The additional necessary resources were provided, although somewhat belatedly. There was a period when demands created by growth exceeded the community's ability to respond, but by the time the research team was in Craig in 1981, the majority of these inadequacies had been resolved and the community appeared to be managing quite well.

In summary, the lesson from Craig appeared to be that while a community can probably manage growth well if it possesses any two of the three variables we have identified, it can suffer relatively serious consequences if any two of these three variables are not present to some reasonable level.

In Washburn, we did not observe any major shortages or problems as a result of growth. This was primarily because the plant site was located midway between two metropolitan areas which consequently absorbed much of the growth. If all the growth had been accommodated in the small towns surrounding the development site, there would have been growth management problems. This conclusion is based on the fact that there was only minimal cooperation between the developer and the local communities in the early stages of development. The developer was not committed to quality community development and, in fact, in the beginning resisted efforts by the local community to gain information and assistance. In addition, there appeared to be competition between several small communities in the area, particularly between Underwood and Washburn, to gain the benefits from development. However, it seems improbable that these communities could have sufficiently coordinated their efforts to plan and develop the services and facilities that would have been needed had they been able to attract the in-migrating population.

In Price, the community managed growth relatively well, although there was a period between 1974 and 1977 when local facilities and services were unable to keep up with the demand. The housing shortage became acute and is still somewhat problematic today. For a time the school system had to hold classes in old buildings that had not been in use for some years while a new building program was undertaken. Also the water supply system was not expanded in time to meet demand.

Of the three variables we have identified, the one most lacking was the support and cooperation of the developers. The coal mines had been present in Price for several decades, but in the 1970's, these mines were purchased by large energy companies. Because of the multiplicity of developers, no single developer was identified as having responsibility, so assistance did not come from developers to the local community in time or in sufficient amounts. On the other hand, again because of uncertainty about development, the local community could not respond. But once it was clear that the demands were there, the community responded quite well, revealing it was a well integrated community that had the internal ability to respond to needs once they were identified.

The "Poor (or Potentially Poor) Outcome" Group

Ashland experienced no growth, so it is difficult to evaluate in in terms of this discussion. Indications are, however, that any developer, as well as the state, will have to take major responsibility to ensure adequate response in Ashland if major population growth occurs. The lack of administrative structure combined with the high degree of social differentiation and low degree of coordination make it unlikely that Ashland will be able to respond aggressively or effectively on its own.

Forsyth took control of its response and was assisted appreciably (though somewhat tardily) by the state and the developer, who minimized additional population in Forsyth by constructing Colstrip. Because of the lack of tax base and the unwillingness of the county to cooperate, it was necessary for Forsyth to raise its property taxes to their legal limit in order to finance the necessary facility/service expansions. This was done with relatively little ado, a move which benefited the community but hurt the fixed income property owners (mainly the elderly).

Recognizing the need to control growth in demand for municipal services, Forsyth also implemented land use control mechanisms that prevented extensive mobile home development within the town.

The two factors which kept Forsyth from achieving "quality" growth were really beyond its control: 1) the schedule gap between Units 1-2 and 3-4 and the lack of anticipated population and economic growth during the construction of units 3-4 because of the developer's construction of housing at Colstrip, and 2) the limited revenue and growth potential of the community which made further expansion of facilities/services untenable. Given its circumstances, the town of Forsyth appears to have responded quite effectively.

In Rangely the growth was just beginning so we cannot really say that Rangely did not manage its growth well. But in the past, the town has not managed its expansion problems particularly well and there are reasons to believe it will have difficulties in the future. Interestingly, in this community, two of the variables for managing growth well were present. The developer had a commitment to quality growth management and was making resources available to assist the community. (It is unclear that this response was entirely voluntary on the developer's part but one of the parent companies of the developer, Basin Electric Power Cooperative, certainly has a strong history of good community development.) Secondly, community resources were quite good because oil and gas development in Rio Blanco County provided a strong tax base to the county and the school district.

The primary problem preventing adequate preparation in Rangely appeared to be a lack of coordination and cooperation within the community. There were conflicting factions in the community who were having a difficult time cooperating. It appeared that this conflict may be a major problem which could cause Rangely to be unprepared for future growth.

Grants was a community beginning to experience the effects of decline in the uranium industry. When major growth from energy development first occurred in the mid 1950's and again in the 1960's, Grants had not been well prepared, lacking both coordination between groups in the community and the support of developers during those periods. Additionally, resources available in the community were not sufficient to provide good services and facilities even before growth began. In view of this background, it is interesting that the problem developing in Grants is that while the community has become better integrated internally, it lacks the resources to effectively manage a major economic decline. Developers in Grants, like most developers in this country, do not appear to have a plan for managing economic decline caused by a withdrawal of their activities from an area. This is a serious problem which is bound to become a major issue in most energy communities in the West. As development declines and withdraws from local communities, there is a lack of historical precedent both for communities and for corporations on how to manage such a downturn. In Grants it appears that this downturn will not be well managed and that the negative consequences will fall primarily upon individuals, causing a level of personal suffering and deprivation which might have been avoided.

In summary, the three variables -- corporate policy, community cohesiveness or integration, and community resources -- appear to determine how well growth is managed. Further, it appears that if any two of the three variables are present to an adequate level, growth can be reasonably well managed.

C. What are the attitudes of both oldtimers and newcomers toward development?

Because the project could not use structured survey instruments, quantitative measures of attitude were not possible. Field researchers recorded their impressions of major attitudes when they were relatively apparent. Many of these perceptions were previously discussed in detail; thus, only major conclusions are reported here.

These were the major observations reported:

1. In nine of the ten study communities, a majority of local residents appeared to support development. The only community where this may not be true is Ashland, and here no coherent position has been taken one way or the other.

In most of the communities, conservationists and environmentalists, agriculturalists and a variety of interest groups were concerned about specific aspects of a project.

Structured attitude surveys were available for Douglas, Washburn, Wheatland, and Gillette which provided strong evidence that a majority of residents wanted development to occur in their communities. Interestingly, newcomers probably don't differ much from oldtimers in this respect. Obviously, most newcomers were in favor of development, but we suspect they are not much different from indigenous residents in their views of the advantages and disadvantages of development.

2. The concern of agriculturalists was apparent in most of the communities. It is reasonable to conclude that a significant number -- sometimes a minority, sometimes a majority -- of agricultural people opposed development in most, if not all, of the ten communities.

3. While a majority generally support development, nearly everyone worries about the social problems development brings; most people are highly aware of "boom town" possibilities.

In the study communities, almost everyone perceived at least some increase in crime, even though perceptions varied a great deal on this issue.

A number of problems occurred during the peak growth periods in practically every community. Most people, old and new, would agree that housing shortages occur, prices rise to some degree, and a host of social problems do increase. But few people were so annoyed by such problems that they would oppose development.

4. Concern with environmental effects was widespread among all groups. Several energy company employees reported they had filed complaints against their employers for violating pollution laws. Our perception was that a majority of people in all the study communities were highly concerned about maintaining a clean, unpolluted environment.

5. We suspect the largest attitude differences are between highly mobile workers and all others, new and old. New permanent

workers appeared to be very similar to local residents in basic values and beliefs. This is consistent with numerous observations that very mobile workers live in a world whose social structure is unique, leading to and allowing for unique value positions (see Section H below).

D. What are the effects on community facilities and services?

We interpreted this question as having two parts: (1) how does provision of services and facilities actually change; and (2) what are the social components related to changes in facilities and services.

In all the communities where growth was large (Craig, Wheatland, Douglas, Washburn, Grants), facilities and services were either overloaded or at maximum use during the peak period. Immediately following the peak most services and facilities were more satisfactory, even under used. Providing an adequate supply of services and facilities was difficult for all the communities. A major problem is finding front-end financing, especially for city services -- sewer, water and streets. Normal revenue sources were inadequate in all the communities. Rapid growth can only be accommodated if non-normal revenue sources are found for city services and facilities. A second problem is uncertainty. In only two cases -- Douglas and Wheatland -- were services and facilities expanded before demand exceeded supply, and even then those expansions were not across-the-board. Uncertainty makes developers reluctant to make grants or loans available before the fact. Elected officials are reluctant to incur debt before the demand is clearly present. But the lead time necessary for most facilities is so long that if risks are not taken, there will be a period when demand exceeds supply. Thus, the provision of services and facilities is not just a dollars and cents problem, it is a social problem of coordination and psychological evaluation (risk taking).

The second component to providing services and facilities is clearly a social organizational problem, and it has many dimensions varying between communities. As illustrated numerous times, provision of services and facilities is highly dependent on the level of cooperation in a community (integration) and the coordination of the community with the developer. If power is held by a few and those few oppose development, planning for new services may be delayed and severely hampered. If city and county governments don't cooperate well, then service financing and delivery is more difficult.

It is obvious that having adequate or surplus services and facilities helps to mitigate the negative effects of development. Specifying adequate levels/numbers of services and facilities is rather simple (i.e., number of policemen needed, number of hospital beds, etc.). What is complex are the social interactions which must occur to provide the needed services and facilities. Thus, EIS's need to do more than forecast the level of services and facilities which will be needed. They need to address the social question of whether these services and facilities will be provided in the proper time frame.

E. What are the major lifestyle and social organization changes resulting from energy development?

Understanding the social organizational processes in a community clarifies numerous aspects of lifestyle changes. Significant changes in lifestyle are revealed in the discussions in Chapters Three through Six, detailing changes in the four social organization processes. Changes in the distribution of resources and power clearly affect aspects of the lifestyle of several social groups. The changes detailed under diversity and complexity, Chapter Four, report other changes in lifestyle as described in laymen's terms, i.e., changes in manner of dress, embracing different social time activities, engaging in new and different forms of recreation.

If description of lifestyle changes are important, most can be identified by carefully analyzing how social organization processes will change and how such changes are reflected in changes in lifestyle.

Specific changes in lifestyle which are recorded in the case studies include:

1. The permanent operating employees of large projects often may have more leisure time than indigenous residents. Greater leisure time often is translated into a greater variety of social activities.
2. Permanent workers often have more personal disposable income than local community residents. This influences what they do in their spare time, sometimes creating new business markets, and frequently placing more demand on formal leisure/social activities which cost money.
3. As pointed out in Chapter Four, any significant increase in population size can result in a variety of new social and

recreational interests, i.e., new special interest groups, religious groups, recreational organizations, and hobby groups.

4. The presence of shift work often signifies a major shift in community activities. If shift work forces are large enough, facilities and services will appear in conjunction with work shifts. There may be more all-night convenience stores, religious and recreational organizations may provide alternative hours of service.
5. The change from particularistic to more universalistic criteria in making a variety of social and business decisions appears to take place where population growth is large. Criteria used in making financial loans, selecting membership in private clubs, and other decisions involving social status and prestige may undergo change.
6. The most significant difference in lifestyle appeared to be between highly mobile workers and their families and all others. Actually, differences in values and lifestyles between most new permanent residents and older residents did not appear very large, in part because many of the newcomers apparently are native to the region.

   However, the structure of life for highly mobile people does create major differences in lifestyle. These differences are discussed more fully in Section H below.

F. What are effective mitigation strategies?

Viewing communities in a wholistic fashion, as social organizations, helps to clarify the structure of an effective mitigation strategy. In terms of social organization, it is clear that to mitigate correctly the developer or project sponsor must be recognized as part of the system; mitigation actions must be viewed as part of the social organization process; and the mitigation plan must be compatible with the social organization system of an individual community.

Thus, an effective mitigation strategy must have three general characteristics:

1. It must be designed from accurate information, both present and future, about the community's resources and social organization and about direct project inputs (the developer).
2. The mitigation program must be made compatible with the important social processes functioning in each community.
3. Recognizing the developer as part of the community helps to identify workable mitigation actions and diminishes the prospect of conflicts and misunderstandings. If the developer is included as part of the community, he will take the attitude that the community's problems are his problems. Being part of the community, the developer has the same rights as any other member, and thus, requests or demands placed on the developer must be done as for any other community member. This places the developer within the

democratic governing process of the community, protecting and controlling both parties.

Within these general characteristics, the successful mitigation programs reviewed in the case studies revealed the following necessary components:

1. Sufficient lead time -- problems of uncertainty must be overcome before much change occurs. If preparations are not made until demand exceeds supply in the public arena, there will always be significant social disruption and unnecessary human suffering. Almost by definition, a successful mitigation strategy mobilizes resources in advance of demand, thereby preventing potential problems.
2. Adequate levels of resources must be provided to supply at least the minimum demand forecasts for public services, i.e., water, sewer, fuel, housing, social and human services.
3. Flexibility must be built into the mitigation program. Forecasting techniques are an art, but unanticipated changes and needs will arise. A good mitigation program is structured to accommodate change with the mechanisms for change being an integral part of the program.
4. The mitigation program must be assisted by a monitoring program, the essence of which is an information system that will inform officials in sufficient time of

departures from forecasted needs so that changes can be made before demand greatly exceeds supply.

Of the nine communities, only two had really successful mitigation programs -- Wheatland and Douglas. Craig did develop many of the components described above as development occurred, but because Craig was not prepared in advance, it did experience a disruptive period.

Washburn was much like Craig; it developed a mitigation program as development occurred. But the level of disruption was low in Washburn because the impact was diffused.

Rangely was struggling to develop a mitigation program, but internal conflicts in the community suggest that whatever plan is eventually devised be will at least partially after the fact.

Grants received some assistance from the state and some cooperation from the developers, but it was basically on its own during the early years. State attention increased during the late 1970's. No specific mitigation program was attempted.

Forsyth was greatly affected by Montana Power's mitigation program in Colstrip. Unfortunately, it appears that Forsyth's participation in the plan was minimal and that community residents feel the mitigation effects were so expensive that they reduced the benefits received by Forsyth. This is an interesting aspect of new-town development that warrants further attention.

Salina did not have, or need, a specific mitigation program, largely because of the expansion and hiring policy taken by the developer and the limited size of the development activity.

Price also did not have a specific mitigation program, although one would have been very helpful. It is likely that more attention and effort will be made in this regard for any future developments, as the state's attention to these issues has increased substantially since the mid 1970's.

Specific strategies used in the communities were described in the case summaries in Chapter Two. The more prevalent actions which produced successful mitigation were the following:

1. City services, sewer, water, streets and fuel (electricity, gas) are obvious necessities. In every town where mitigation was successful, direct financial aid was provided by the developer. (For specific ways in which this was done see the case summaries, Chapter Two.)
2. Housing was not adequately supplied by normal "market forces". In all the successful cases, housing for construction workers was supplied almost completely by the developer. Additionally, a high percentage of housing for permanent workers was supplied, in one form or another, by the developer. This is a complex topic; many mechanisms have been used to supply housing. But successful mitigation almost always required direct housing assistance by the developer.
3. Providing adequate school facilities and services was often one of the tougher mitigation tasks. Bonding was the most commonly used mechanism, but this almost always resulted in

facilities lagging behind demand because property tax revenues were insufficient prior to development.

Wheatland was the only place where the developer gave large direct financial aid. There the company built schools and leased them to the school district. Some communities received financial aid from state impact funds, but the amounts were usually too little, too late. Thus, it seems that adequate preparation in terms of education will usually require direct financial aid from the developer.

4. County level services (hospitals, libraries, recreation, etc.) were more easily provided than other services because county governments usually had better financial resources and property taxes from projects accrue mainly to county government.

   The main problem here was uncertainty -- uncertainty about whether development would occur and uncertainty about the level of demand. Once these information problems were resolved, most county services were expanded to meet most of the demand.

In summary, mitigation strategies must vary by community and by development characteristics. There is no fixed set of strategies or actions that will always provide adequate mitigation. However, any mitigation program which incorporates the general characteristics and specific components discussed in this section should be able to produce the needed mitigating actions for any particular community.

G. How can cumulative social effects be measured or described?

The primary problem in measuring cumulative social effects is deciding which social effects to consider. The social change brought about by large growth is extensive. Thus, in the absence of an analytic or conceptual framework specifying which social effects to measure and why, efforts to measure cumulative social effects can easily be defeated by frustration from lack of direction.

The social organization model developed for this project provides a suitable analytic framework for deciding what effects to measure and provides the rationale for doing so. In general terms, the organization model specifies that changes in community resources, social organization processes, and indicators of well-being need to be measured.

The Social Effects Guide, the other major product from this project, provides additional instruction on how to measure variables within each of the three components of the model. Chapter Ten in the Guide specifically addresses how to forecast baseline, direct project, and total inputs and discusses the effect each has on the social system.

Reading these chapters in the guide will provide details about which inputs are to be measured and how these inputs may change the social components described in the social organization model. It also clarifies that measuring baseline social conditions and forecasting cumulative social effects are more feasible than forecasting the incremental social effects of one project when the baseline condition is changing or when there are multiple projects or sources of inputs.

H. The social group experiencing the most negative impacts appear to be itinerant workers.

Mobile construction workers were mentioned in several of the preceding discussions. Many of the most pertinent issues related to impacts from energy development seemed to involve itinerant workers. We use the term itinerant to indicate workers for whom moving is an occupational characteristic; movement from location to location is necessary for employment. We believe knowledge of this social group is essential to understanding the social effects of energy development, yet we found very little about them in the literature we reviewed (see Literature Review, BLM Social Effects Project). Because so little is known about this group we emphasize that the following discussion is suggestive, not conclusive.

Functioning within a framework of long term mobility suggests that the basic social processes of living will be different from those who are less mobile. The processes involving child-rearing, schooling, courtship and marriage, personal and family finances, and recreation are likely to be structurally different for people who move constantly, implying differences in lifestyles, values and social behaviors and attitudes.

These issues -- differences in lifestyles, conflicts of values, and disruptive social behaviors -- are some of the more common concerns about development. Where we saw evidence of the salience of these issues, mobile workers were almost always involved. We suspect that permanent workers in energy are much like indigenous residents; the structural process of their lives closely resembles that of locals. It is the itinerant worker who appears to differ significantly.

Any sound conclusions about the social life of an occupational group requires extensive study such as that done by Massey. Based on our limited observations in the field we offer the following tentative descriptions of issues related to itinerant workers:

1. If there is an education problem in growth communities, it probably involves the children of mobile workers. Frequent enrolling and withdrawing from school systems is disruptive, and children who move from school to school are more likely to have learning problems.
2. The marriage and divorce structure for mobile workers is probably less conventional. Living together without the sanction of marriage is more normative, and divorce or separation is more common.
3. Personal and family financing is built around irregularity of paychecks. Thus, different patterns of consumption and saving should emerge.
4. A variety of social behaviors viewed as deviant, or even criminal, by less mobile populations may be seen as normal and functional by highly mobile groups.

The basic differences between itinerant and non-itinerant populations can be extensive. These differences need to be better understood and their implications for social change need to be realized. A matter of crucial importance is that itinerant workers and their families may be the most victimized group when energy development occurs. If we are correct, this victimization occurs, at least in part, because itinerant workers are disenfranchised members of society in crucial and important ways.

In our complex and highly organized society, access to and acquisition of basic resources needed to maintain a certain quality of life are assured by an individual's membership in an organizational and/or community structure. Permanent employees of companies are usually assured of some reasonable level and quality of housing because of the efforts by the company, the organization who both claims and controls them. Other permanent employees not associated with large organizations are members of local societies. They and the groups to which they belong participate in local political and social organizations through which the negotiation process for acquisition and maintenance of necessary resources is carried out.

In the case of itinerant workers, however, these individuals are often not members of an occupational organization nor are they members of any local community because of their high mobility. (Even if itinerant workers are union members, this is only a partial remedy of the disenfranchisement described here.) Therefore, these individuals are poorly represented in the structures and processes which distribute resources and, as could be expected, they appear to be very significantly victimized. They are seldom provided adequate basic resources such as housing, medical care, and education, or they are provided these resources only at an exorbitant price and in a highly unreliable and uncertain manner. Predictably, we found many members of this group to be highly disillusioned, angry, and frustrated. If construction workers are unionized, many of these problems are minimized if the union is active in getting resources for its members. But many of the energy projects in the West use non-union labor.

Interviews with permanent residents confirmed that itinerant workers are not accepted members of the community. Only after being pressed by the interviewers did most residents realize that they, in fact, knew almost nothing about these workers even though they physically occupy their communities for periods of several months to several years. It also became apparent, particularly in interviews with city officials, that there is often little desire to provide resources, particularly housing, for itinerant workers. The reasons for this ranged from the economic problems of providing temporary housing accommodations to not wanting to encourage these "undesirables" to remain in the community.

It is evident that frequently neither local communities nor major organizations claim these itinerant workers as members. This unique situation has a manifest negative effect on all of the groups involved -- the energy companies, the local community, and the itinerant workers themselves. Given the amount of personal and social disorganization that appears to exist among the itinerant workers, it hardly seems plausible that the productivity of these workers could be cost efficient for the companies who employ them. Further, it appears that many of the problems associated with energy development stem from the behavior of itinerant workers, and are the kinds of problems likely to be identified by residents as the most undesirable aspect of development. However, the community's participation in the process of disenfranchising this social group must cause at least some of the social disorganization problems of these workers which the local community finds unacceptable.

This structural situation is undesirable from both a social and an economic standpoint. It is also a problem which is likely to be compounded as energy development increases in western areas; the number of itinerant workers required in the West is going to increase dramatically, and the type of people coming in to take these itinerant jobs is changing because of economic conditions in other parts of the country.

Our interviews revealed that workers from other industrial sectors and geographical regions of the country are coming in considerable numbers to seek employment. These new recruits, who come from the timber industry in the northwest and the manufacturing industry in the midwest, among others, have expectations of receiving adequate basic resources. Formerly, they were members of an occupational organization and were permanent members of local communities, with both relationships assisting them in obtaining basic resources. The anger, disillusionment, and frustration of the itinerant families we interviewed was apparent. They did not understand much about the local community, having only recently arrived, but they were certainly angry about what they perceived as an unjust and exploitive attitude of both local community members and of companies.

8.2 A Predictive Summary of Social Effects

8.2.1 The Value of a Summary of Social Effects by Type of Community

Anyone involved with researching or managing the socioeconomic effects of energy impacted communities has probably felt a sense of frustration with trying to classify or predict the social effects which occur. This frustration stems in part from the fact that these effects have varied considerably between communities, as the results of the previous chapter make clear.

One problem is that few of us have personal knowledge of more than one or a few impact communities. Also, the media has confused the issue by focusing attention on a few highly negative effects that emerged in a small number of energy communities. This has subsequently focused attention on specific impacts of development, which are only the symptoms of the process of growth, not the major causes or intervening variables. Thus, attempts to classify types of effects has met with confusion and led to heated debate with little resolution to date. A review of only one or two impact towns, particularly some of the more famous cases such as Rock Springs or Gillette, Wyoming, can seduce a forecaster into stating that certain effects are bound to occur wherever there is energy development. No sooner is this done than someone else provides convincing evidence that, in fact, a different set of effects are the ones most likely to emerge.

When such discrepancy continues, it suggests that the wrong criteria are being used to order observations, or that no regularity is occurring in the observed phenomena, thus stifling attempts at predictions. One of the major obstacles to discovering which units or forms may actually be accounting for the difference is the lack of sufficient data base. Correcting this deficiency was one of the major goals of this project and one of the reasons for carefully selecting the unit of analysis--in this case, the community. We assumed that ten cases would be enough to tell us whether community social organization was one of the critical variables that could help account for the wide variation in socioeconomic impacts observed in the western energy region.

We believe the data reviewed in this report provide good evidence that the social organization processes of communities constitute one of a few critical variables determining the socioeconomic effects of development. If this is true, then a typology of communities which differentiates between types of community social organization could substantially improve our ability to forecast socioeconomic impacts, particularly at the community level. Toward this end, we have "induced" from the data a suggestive typology.

8.2.2 Agricultural Versus Mixed Economy Communities

As described earlier, three major variables determine to a great extent how communities will be impacted by growth: policies of the developer, cooperation/coordination in the community, and existing community resources. Unfortunately, none of these are usually known before an assessment is done.

However, one variable, which can be derived from available secondary data, does predict with some level of usefulness important characteristics of a community's social organization and the community's resource base. This variable is whether the dominant economic base of the community is only agriculture, or whether the economic base is mixed, i.e., there is a major economic sector other than agriculture.

The case studies indicate that agricultural communities tend to differ significantly in social organization from other communities. Agricultural communities also tend to have a different community resource structure. They usually have fewer economic resources, especially public revenue with which to mitigate impacts of growth.

Based on these differences, we created a summary of potential growth effects using the two types--agricultural versus mixed economy communities. Table 8-1 summarizes differences and expected changes for these two types of communities for the three major components of the social organization model presented in Chapter One. The table is presented in three parts (pages), one each for "Community Resources", "Social Organization Processes", and "Social Well-Being Characteristics". The rationale for the presentation under the various headings in the table are, of course, provided in the previous chapters of this report. The typology (Table 8-1) can be used to alert the socioeconomic assessment team to types of changes or impacts which may need to be addressed in the assessment. Users are cautioned to use the typology only as a suggestive tool, possibly as a scoping tool. Throughout this report, we have emphasized the site-specific nature of many impacts. Any given community may deviate drastically

TABLE 8-1 Baseline Characteristics and Social Changes as Predicted for Agricultural Versus Mixed-Economy Communities.

	COMMUNITY RESOURCES				
Type of Community	Historical Experience	Culture	Demography	Facilities & Services	Attitudes & Perceptions
AGRICULTURAL COMMUNITIES	• Less likely to have experienced development • Because changes in agriculture are gradual reaction to to any change will be cautious and uncertain	• More likely to be dominated by one ethnic group, usually Anglo or Hispanic • Heterogeneity of cultural characteristics likely to be low, i.e., religion, ethnicity, occupational structure	• Median age likely to be high because of out-migration of youth • New population may change sex ratio, median age, level of formal education, with consequent impacts	• Initial service levels should be lower because of less demand and smaller tax base, less public revenue • Funding new/expanded services can be hard, because of low tax base, and reluctance of agriculturists to support increase in property taxes	• Development may be undesirable to some agriculturalists, competition for land, water, labor • More likely to want to keep things as they are, agricultural lifestyles are incompatible with urban/industrial lifestyles in many ways, for a variety of structural reasons. • Conservation and environmental groups are likely to perceive energy development as conflicting with other uses of resources in area.
MIXED ECONOMY COMMUNITIES	• More likely to have experienced industrial development • Reaction to change more optimistic and less anxious because industrial changes occur more frequently than agricultural changes	• More likely to have two or more strong ethnic communities • Cultural heterogeneity should be higher, meaning any change in cultural characteristics should be easier to accommodate	• Demographic structure should be more complex in most respects • Demographic changes should be less severe, causing fewer impacts	• Initial service levels may be higher because of past growth periods • Funding new/expanded services may be easier because of more revenue sources, and larger urban populations which use services	• More likely to favor development, more job opportunities, higher wages, increased economic opportunities • Less bothered by new lifestyles, new ethnic groups resulting from growth • Will be concerned about "quality" of growth, i.e., possible social problems • Special interest groups are likely to emerge and thrive because of greater tolerance due to existing diversity of values.

TABLE 8-1 (continued)

SOCIAL ORGANIZATION PROCESSES

Type of Community	Complexity & Diversity	Outside Linkages	Distribution of Resources & Power	Coordination & Cooperation
AGRICULTURAL COMMUNITIES	• Initially complexity should be relatively low -- economic, social and political • Growth will undoubtedly increase complexity • Increase in complexity will increase need for cooperation/coordination; if too much, can cause stressful adjustment.	• Should be minimal in beginning, limited to agricultural, education organizations. • Change should be large because of mitigation needs.	• Any large growth should cause considerable change in distribution of resources. • Change here can be very disturbing, can easily lead to conflict. • Power, control can become major issue for fear agricultural needs may be overlooked.	• Often will be high at present, but change in present system can be hard, since the system is often not very complex. • As complexity and linkages increase, the old basis for integration may not be appropriate, thus a stressful period of adjustment is likely.
MIXED ECONOMY COMMUNITIES	• Community may already have moderate diversity, so change may be minimal • Even if change is large, adjustment may not be very stressful.	• Can be fairly extensive, depending on type of local industry. • But energy development will undoubtedly cause increase.	• Distribution should be more equitable because of multiple centers of resouces and power. • Change often won't be of much concern, but can be if resources needed by existing local industry are threatened.	• If present integration is good, then change may be easy. • If diversity and linkages are already moderately present, then the basis of integration may not change much, and adjustment and accomodation may be fairly easy. • But, if integration is already poor, then change may be very difficult.

TABLE 8-1 (continued)

SOCIAL WELL-BEING CHARACTERISTICS

Type of Community	Behaviors	Access to Resources	Perceptions of Community Well-Being
AGRICULTURAL COMMUNITIES	• Most indicators of social disruption should increase. • Property crimes should increase dramatically. • Family disruption should increase, i.e., divorce, spouse abuse, child abuse and neglect. • Alcoholism should become a more public problem.	• At peak, access to public resources can become severely restricted unless strong mitigation actions are taken. • Types of personal wealth should increase from beginning for most groups, i.e., wages, salaries, profits. • After peak, access to resources and wealth should be greater for most groups.	• Prior to development, perceptions may vary considerably between communities and between groups within a community. Any initial assessment should be alert to these differences. • As growth occurs, perceptions may change several times, and should vary among local groups. • After growth, perceptions of community may often be split. Many agricultural people may value the community less.
MIXED ECONOMY COMMUNITIES	• Above measures of social disruption should increase, but not as dramatically as in an agricultural community.	• Same as above, except effects should be more muted. • If community not well coordinated (integrated) before development, however, effects can be very different for different groups.	• Perceptions of community will often be more complex and hard to assess. • Changes in perception during growth probably won't vacillate as greatly as much as in agricultural communities. • After growth, perceptions are more likely to be more uniform, since community had already adjusted to a mixed economy and the changes in lifestyles and social structures.

from the predictions in the typology, thus the typology should be used only as a sensitizing device.

The typology is easily used in conjunction with the Social Assessment Guide prepared for this project. The Guide provides detailed procedures for scoping the assessment (Chapter Seven in the Guide) and complete instructions on how to assess any impacts suggested in the typology.

Footnotes

1 The study region included Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming.

2 It is important to note that individuals are affected by numerous forces in addition to those in the local community, i.e., personal biography, non-local events, biological factors.

3 This means that the exogenous inputs cannot be considered independent variables, or that they can only be considered independent variables at the beginning of each time period examined, with the analysis of the inputs for time $t + 1$ conducted outside the model.

4 The model particularly specifies that the unit of analysis is the sociological "community" rather than a jurisdictional unit.

5 This does not mean that the well being of individuals can be addressed, but merely that they are individuals, per se, which would require a very different approach (including examination of genetic, psychological, and personal historical characteristics) considered not to be appropriate or feasible for this project.

6 We recognize that defining "community" is a difficult task, arousing much debate. For this project we directed each field research team to determine the boundaries of each community based on their personal observation and information from interviews conducted in the field.

7 Although this document refers numerous times to the integrative function of the Mormon religion, this influence should not be over-stated. The social behaviors of members of the Mormon Church are still reasonably heterogeneous.

APPENDIX A

Outline
for
INDIVIDUAL COMMUNITY REPORTS
BLM Social Effects Project

Chapter 1. Historical Analysis

A. Date of establishment of original community/communities and other relevant facts

DS: Local library or bookstore

B. Important historical events: focus on events which influenced the economic base, may have established lingering political cleavages, etc.

C. Important historical figures: emphasis on more recent figures (1920-1960) and on ethnic leaders. Focus on why they were important and for what

D. Economic base of community over time: just a general description but be accurate (actual employment data included in Chapter 3)

E. Relationship to other communities and between officials of various districts, i.e., city-county relationship, rival towns or school districts

F. Distinctive cultural characteristics: these can include ethnic factors, economic factors (agriculture vs. mining history, etc.), physical environment factors which have influenced culture (repeated droughts, natural catastrophes, etc.), religious background

G. Description of previous energy or industrial development projects: get dates and employment size for construction and permanent operation; owners/sponsors and have they interacted with community; how people now think the project benefited/did not benefit them.

(Note: This section should be no more than 10 pages. If you find a good history of the community, submit a copy with the report. The person who writes their history should be sure he/she really knows the community history, then that person can condense what is important to 10 pages or less for the interviewers.)

Chapter 2. Recent and Ongoing Energy Projects (1965-1980) (approximately)

A. Number of projects, size, location, and construction and operation schedules (include any projects which are affecting the community)

B. Project employment (construction and operation, by month, if possible; if not, by quarter, or at worst, annually)

C. Information on sponsor(s)

1. Who are they? Private or publicly owned, affiliate of national/international corporation? What is type of ownership, public or privately held?

2. What has been their prior experience with community development, i.e., do they have an explicit community development philosophy or program? Have they actually participated in a community development program per se?

3. Do they (did they) maintain a local office in the community? (If so, be sure to interview the head of their office.) If no local office, where did they run their project from? Try to interview person in their office most closely tied to community development.

Chapter 3. Community Resources

A. Economic Characteristics

1. Employment by one-digit SIC Code for 1960 and 1970 to 1979 (Table __*)

DS: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System (REIS), Regional Employment by Industry, 1940-1980. If anyone doesn't have this, please call Bob Kimble, WRC.

2. Labor force characteristics

a. Occupational characteristics, 1960 and 1970 (Table __)

---

*Copies of tables are attached to this outline.

DS: 1960, 1970: Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, (State).

b. Labor force size (Table __)

DS: 1950, 1960, 1970: U.S. Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, (State)

c. Labor force participation rates (male, female) for 1950, 1960, and 1970 for county and state (Table __)

DS: 1950, 1960, 1970: U.S. Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, (State)

3. Income characteristics

a. Per capita income for 1960, 1970, and 1980 for county and state (Table __)

DS: U.S. Bureau of Census, Current Population Reports, Population Estimates and Projections, Series P-25, No. 780.

b. Percent poverty for 1950, 1960, and 1970 for county and state (Table __)

DS: U.S. Bureau of Census, Census of Population: 1970, Poverty Status in 1969 and 1959 of Persons and Families for States, SMSA's, Central Cities and Counties: 1970 and 1960. Supplementary Report PC(51)-105.

4. Demographic characteristics

a. Population by year for 1950, 1960, and 1970 to 1980 (Table __, Figure 1)

DS: 1973-1978: U.S. Department of Commerce, Bureau of the Census. Population Estimates for States, Counties, and Sub-county Areas, P-25 Series; 1973, to 1980. (Use advance count for 1980 if final is not available yet.)

U.S. Department of Commerce, Bureau of the Census, Final Population Count (State).

(Note: Every state has a cooperative program with the Census. Locate the Cooperator (usually a State University) and they can give you this data.)

b. Age and sex profile for county and state, 1960 and 1970.

DS: 1950, 1960, 1970, and 1980: U.S. Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, Wyoming. (Use advance count for 1980 if available.)

c. Ethnicity, 1960 and 1970, for county and state (Table __)

DS: 1950, 1960, 1970, and 1980: U.S. Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, Wyoming. (Use advance count for 1980 if available.) The categories for 1980 are changed so combine/collapse ethnic categories to present and total for White, Black, Indian, Asian, Spanish and other. Combine the Spanish/Hispanic category for the 1980 Census.

B. Educational characteristics: mean education for persons over 25; 1950, 1960, and 1970 county and state (Table __)

DS: 1950, 1960, 1970: U.S. Department of Commerce, Bureau of the Census. Census of the Population: Characteristics of the Population, Wyoming.

C. Public facilities and services: total manpower and total expenditures for law enforcement (sheriff and police), schools, mental health center, and hospitals (also number of physicians), and welfare agency for 1960 and 1970 - (for as many years as available) (Tables __ and __)

DS: State agency annual or quarterly reports (usually the records for these agencies are available at the corresponding state-level office of that agency), local interviews in the community.

D. Voluntary associations (including churches) for 1960, 1970, and 1979 or 1980, if available (Table __)

DS: Local phone book, city directory and/or Chamber of Commerce

E. Attitudes and opinions: expectations people held toward development at the beginning of the development, i.e., about 1970 (Tables __ and __)

DS: Attitude surveys for Douglas, Colstrip, Wheatland, and Washburn; local interviews for all communities (see interview protocol). Also use local studies impact statements which have attitude data.

F. Summary analysis: Authors of each report shall do a summary for each chapter. For this chapter, the focus should be on the adequacy/inadequacy of the communities' resources. Particularly, focus on any resource(s) which may have made a difference in how community adapted to development.

Chapter 4. Differentiation (increasing heterogeneity)

A. Political change

1. Change in complexity of political structure, i.e., change in number of political and public service offices, 1970 and 1980 (Table __)

DS: Local phone book and interviews with agency heads (see protocol in interview guide)

2. Change in government laws and regulations which relate specifically to energy, i.e., siting laws, severance tax laws, land use laws/regulations, joint powers acts, etc. (Table __)

DS: State Legislative Service, local newspapers, local interviews.

Chapter 5. Stratification

A. Political change

1. Change in power structure

a. Changes in holders of influential positions, i.e., county commissioners, mayor and city council, city administration, city and county attorneys, school superintendents, state legislators, school board members, police chief, sheriff (see Tab;e __ for the actual positions we want data on). Get data for 1970 and 1980, list in table form (Table __). Compute an Index of Change:

$$\frac{\text{No. of changes}}{\text{total positions (1970)}} = x$$

DS: Elected office holders are usually available from city/county clerk. Otherwise, interviews with locals should provide data.

2. Change in actual power the above office holders have. List any changes/additions in legislation or regulations. Also, rely on interviews with these office holders; there are many non-formal, subtle ways they may have increased the power of their office.

3. Who is included/excluded in power structure? (Table __)

   DS: Create a table of office holders and fill with basic demographic data for each: age, sex, ethnicity, religion. (You can get religion by asking about churches, power of voluntary organization, etc.) This should reveal any glaring biases. Also, use interview information. Who do people say are included/excluded?

4. Differential effects in planning and zoning

   DS: Interviews with all local groups. Does one (or a few group(s) appear to be favored by planning and zoning actions? Are there alliances between local groups?

5. Change in access to public facilities and services (Table __)

   DS: Examine city and county budgets for 1970 and 1980. List what public groups and services are funded and compute ratio to total expenditures. Hypothesis could be that more groups and more people get a share of public budget when growth occurs, i.e., day care, senior citizens, new welfare, mental health, and nursing programs. Also, use interview data (see protocol forms).

6. Change in political will of community (public and private). Focus on use of legislated powers: what powers did they exercise/not exercise (joint powers, optional 1¢ sales tax, zoning) and why? (Table __)

   DS: Interviews (see protocol form)

B. Economic change

1. Who got direct employment on project or other (secondary new jobs)?

   DS: See if project has employee records (surveys) that will give percent of locals employed. Also, local agency interviews, especially job service or employment office

2. Change in distribution of average earnings per worker for 1960 and 1970-1978 (Table __ -- include with per capita income table).

   DS: U.S. Department of Commerce, BEA, REIS.

   (Note: Average earnings have to be calculated = total earnings per sector/total employment per sector.)

3. Change in access to housing (Table __)

   DS: From planning office or city/county clerk, try to get a count of housing by type - single family, multi-family, recreation vehicle (RV) pads, mobile homes - for three points in time: pre-construction, peak construction, post-construction. Assessment of who got what housing (access) will have to come from local interviewees. Interview bankers (real estate loan officers), mobile home park managers, apartment house managers, home builders, and realtors. Also, city and county engineers.

4. Change in access to capital (loan funds)

   DS: Interviews with bankers, credit union managers, finance corporations (Beneficial, etc., loan sharks). Also, talk to major users of business capital (builders, large store owners)

5. Change in business establishments by type for 1960 and 1970 to 1978. (Table __)

DS: 1960, 1970-1978: U.S. Department of Commerce, Bureau of the Census. County Business Patterns, (State). Also, the Economic Census gives businesses down to city/town level.

6. Change in employment composition for 1960, 1970, and 1980: Composite Change Index as done by Murdock and Schriner, Rural Sociology, Vol. 43:3, 1978. (Article available from Thompson.) (Table __)

   DS: U.S. Department of Commerce, BEA, REIS.

C. Social change

1. Composite Change Index for age, ethnicity, and voluntary associations for 1970 and 1980. (Table __)

   DS: Data already available from Chapter 3. Indexing method for each variable explained in Table ___.

D. Summary analysis for this section

Chapter 6. Extra-Local Linkages

A. Political change

1. Change in presence of federal/state agencies. Name and type of agency for 1970 and 1980. Call local agencies if you have doubts about their organizational structure. (Table __)

   DS: White pages of local phone book - be sure to look under "State of _____" and "U.S. Government", as well as "County"

2. Change in level of inter-governmental transfer payments. Need total amount of such payments for 1970 and 1980 (Table __).

   DS: City and county budgets for 1970 and 1980. Also for peak year of growth.

3. Change in amount or type of contact with federal and state government agencies or personnel.

   DS: Local interviews with agency heads (see protocol forms).

B. Economic change

1. Change in presence of chain-stores or multi-nationals, e.g., K-Mart, McDonald's, etc. Need number and type for 1970 and 1980 (Table __).

   DS: White pages of local phone book for 1970 and 1980. List all such organizations, then call any you are unsure of.

2. Change in number of manufacturing plants. List manufacturing businesses by type for 1970 and 1977 (Table __).

   DS: U.S. Department of Commerce, Bureau of Census of Manufacturers, 1977 Census of Manufacturers Geographic Area Series.

C. Social change

1. Change in in-migrants. Need migration rate for 1970 and 1980 and total number of migrants (Table __)

   DS: U.S. Department of Commerce, Bureau of the Census, 1970, 1980 Census of the Population, Characteristics of the Population (State), United States. Also by the local Census cooperative.

2. Change in nationally-affiliated voluntary organizations, e.g., NOW, Sierra Club, Ducks Unlimited, Service Clubs -- Rotary, Kiwanis --, etc. Make a list for 1970 and 1980 (Table __).

   DS: White pages of local phone book, 1970 and 1980; and Chamber of Commerce

Chapter 7. Integration

A. Change in cooperation among community organizations, i.e., task forces, church groups, city councils and planning commissions, agricultural extension service, human service councils, school boards, hospital boards.

The idea here is to focus on specific events related to the energy growth such as the forming of a task force, the building of new schools, a recreation center, or a hospital. Integration is a difficult concept, the interviewers should read carefully the Wilkinson chapter in the Literature Review and talk this concept over before interviewing.

DS: Interviews with the three groups in the local community. The question about "events" in the interview guides are there specifically to investigate the integration issue.

B. Group responses to community-level events. Look for cooperation or conflict related to public policies, issues, and events. Do cooperative arrangements between groups/organizations extend to other issues and events.

DS: The patterns of cooperation/conflict follow traditional (obvious) cleavages of race, class (socioeconomic status) or do these issues crosscut these cleavages.

How do cooperative/conflict patterns vary with energy related issues, if at all.

DS: Interviews with local groups. Interviewers need to remember that they should follow the questions on the interviewer guides. But they are not limited to these questions/issues. The concept of integration must and should be pursued until the interviewers feel comfortable they understand the dominant patterns in the community.

C. What groups organize and participate in public issues and events. Pay particular attention to what groups are excluded.

DS: Local interviews.

D. Is there evidence of constituency formation centered around community issues, particularly energy issues -- new environmental organizations (coalitions), newcomer groups like the "Committee for a Community Ambulance" in Wright, Wyoming.

Is there any apparent change in this process of constituency formation as evidenced by inclusion of formerly excluded local groups, outsiders, etc?

DS: Local interviews.

Chapter 8. Indicators of Community Well-Being

A. Analyze changes in rate of divorce (divorce/1,000 population) and total divorces by county and by state, 1970-1980 (Table __).

DS: These data will be taken from the USGS data file and will be prepared and analyzed for each of the study communities by Bob Kimble of WRC.

B. Rate of suicide and total suicides by county and state, 1970-1980 (Table __).

DS: Data will be taken from the USGS data file and prepared and analyzed for each of the study communities by Bob Kimble of WRC.

C. Rate of infant mortality, total number of infant deaths by county and by state, 1970-1980 (Table __).

DS: Data prepared by Bob Kimble (as above).

D. FBI Uniform Crime Index (Part I - 7 categories) for county and state, 1970-1980; Part II Crimes by Category for 1970-1980 (Table __).

DS: Data prepared by Bob Kimble (as above).

E. Per capita service ratios (number of personnel/1,000 population) for 1970-1980 for police and sheriff's departments, mental health, welfare, physicians, hospital utilization rates (Table __).

DS: These data are available from the respective state agencies in each state. The data will be assembled by MWR or WRC, however.

F. Teacher/student ratios; expenditures/student ratio, 1970-1980 (Table __).

DS: Same as E.

G. Unemployment rate and total number unemployed, 1970-1980 (Table __).

DS: State employment offices (to be collected by MWR or WRC)

H. Summary of the communities well-being should be written up, based on above data and the interviewer's observations and an ordinal ranking should be assigned to the community (Table __).

Chapter 9. Appendix for Interview Protocols

Protocol forms for recording each interview are furnished to each interviewer. The protocol forms must be typed and completed in as similar a manner as possible to the county prototype (Douglas, Wyoming) in order to make it possible to write the final research report.